CHAPTER 6

Supply, Demand, and Government Policies

PRINCIPLES OF Economics

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Premium PowerPoint Slides
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2011 update

In this chapter, look for the answers to these questions:

- What are price ceilings and price floors? What are some examples of each?
- How do price ceilings and price floors affect market outcomes?
- How do taxes affect market outcomes? How do the effects depend on whether the tax is imposed on buyers or sellers?
- What is the incidence of a tax? What determines the incidence?

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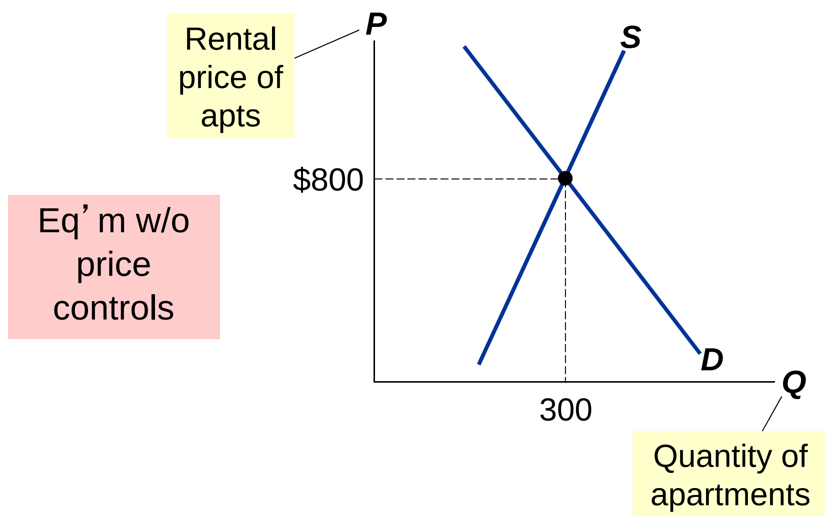
Government Policies That Alter the Private Market Outcome

- Price controls
  - **Price ceiling**: a legal maximum on the price of a good or service *Example: rent control*
  - **Price floor**: a legal minimum on the price of a good or service *Example: minimum wage*
- Taxes
  - The govt can make buyers or sellers pay a specific amount on each unit bought/sold.

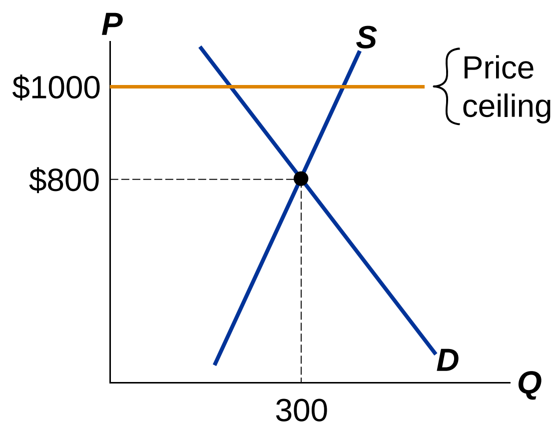
We will use the supply/demand model to see how each policy affects the market outcome (the price buyers pay, the price sellers receive, and eq'm quantity).

EXAMPLE 1: The Market for Apartments



How Price Ceilings Affect Market Outcomes

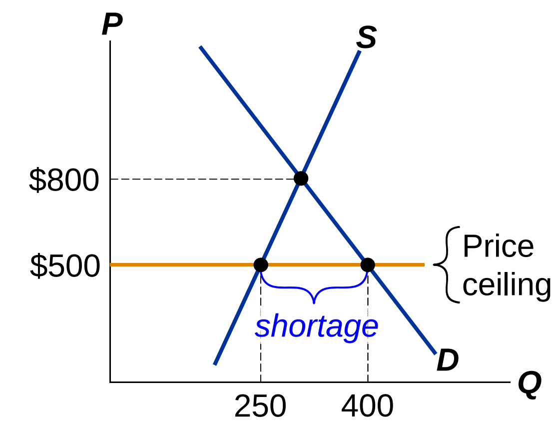
A price ceiling above the eq'm price is **not binding** – has no effect on the market outcome.



How Price Ceilings Affect Market Outcomes

The eq'm price ($800) is above the ceiling and therefore illegal.

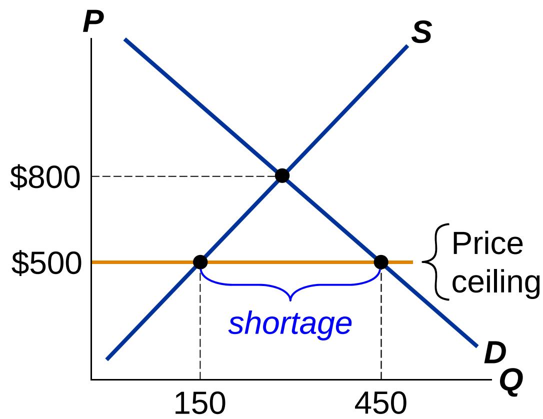
The ceiling is a **binding constraint** on the price, causes a shortage.



How Price Ceilings Affect Market Outcomes

In the long run, supply and demand are more price-elastic.

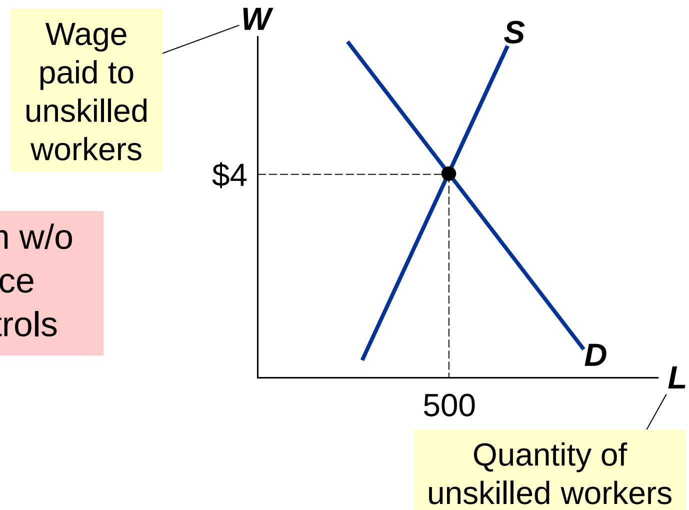
So, the shortage is larger.



Shortages and Rationing

- With a shortage, sellers must ration the goods among buyers.
- Some rationing mechanisms: (1) Long lines (2) Discrimination according to sellers' biases
- These mechanisms are often unfair, and inefficient: the goods do not necessarily go to the buyers who value them most highly.
- In contrast, when prices are not controlled, the rationing mechanism is efficient (the goods go to the buyers that value them most highly) and impersonal (and thus fair).

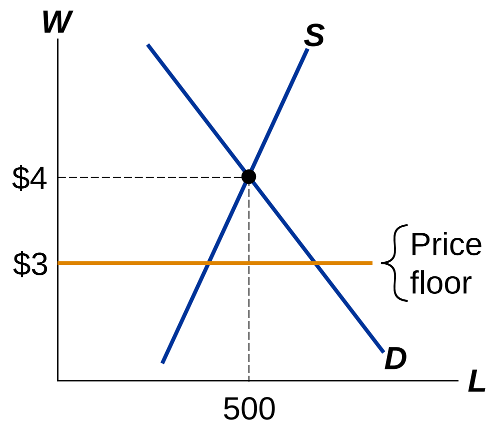
EXAMPLE 2: The Market for Unskilled Labor



Eq'm w/o price controls

How Price Floors Affect Market Outcomes

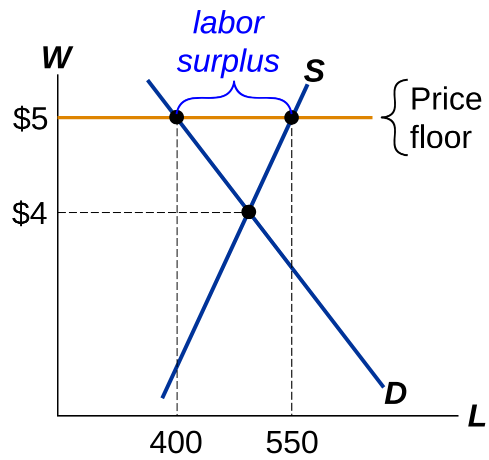
A price floor below the eq'm price is **not binding** – has no effect on the market outcome.



How Price Floors Affect Market Outcomes

The eq'm wage ($4) is below the floor and therefore illegal.

The floor is a **binding constraint** on the wage, causes a surplus (*i.e.,* unemployment).

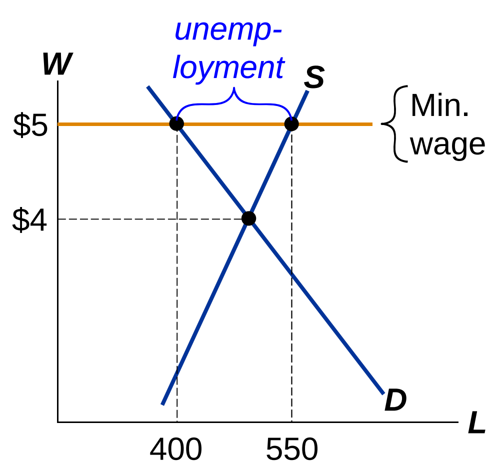


The Minimum Wage

Min wage laws do not affect highly skilled workers.

They do affect teen workers.

Studies:
A 10% increase in the min wage raises teen unemployment by 1-3%.

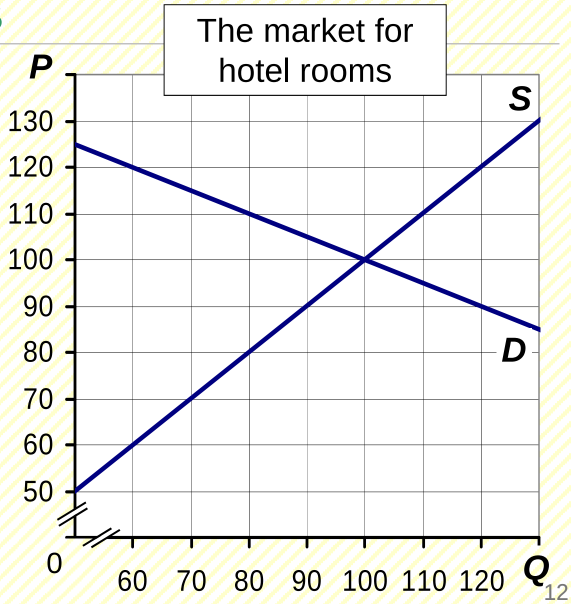


ACTIVE LEARNING 1

Price controls

Determine effects of:

- **A.** $90 price ceiling
- **B.** $90 price floor
- **C.** $120 price floor



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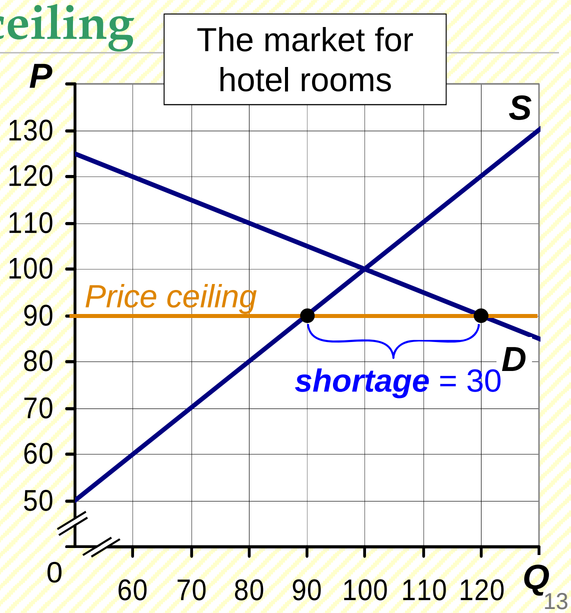
ACTIVE LEARNING 1

A. $90 price ceiling

The price falls to $90.

Buyers demand 120 rooms, sellers supply 90, leaving a shortage.



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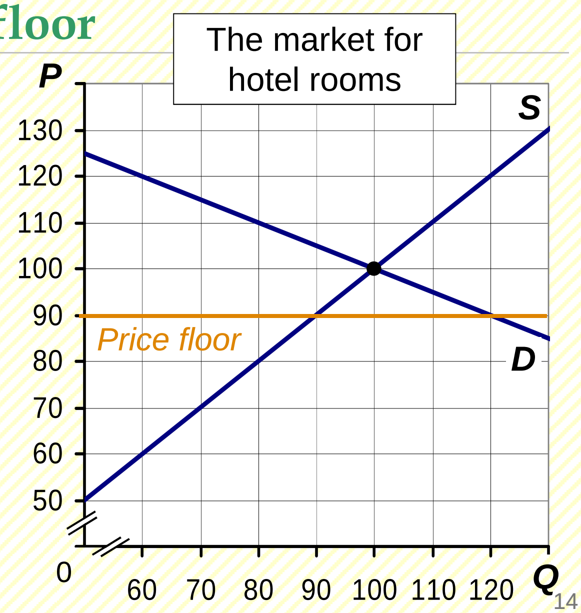
ACTIVE LEARNING 1

B. $90 price floor

Eq'm price is above the floor, so floor is not binding.

P = $100,
Q = 100 rooms.



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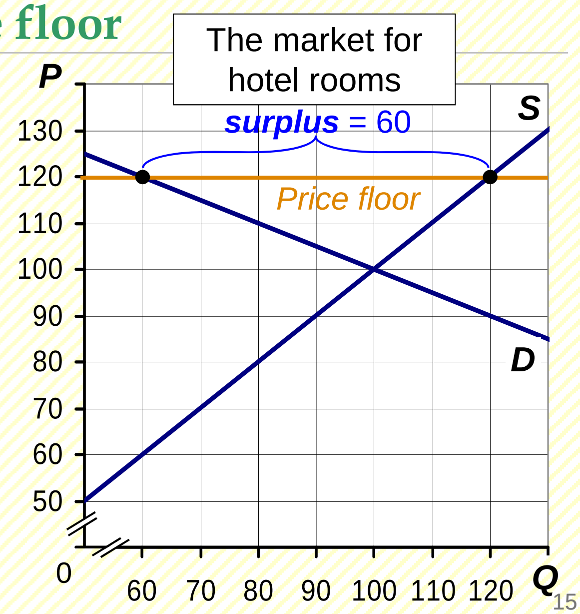
ACTIVE LEARNING 1

C. $120 price floor

The price rises to $120.

Buyers demand 60 rooms, sellers supply 120, causing a surplus.



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Evaluating Price Controls

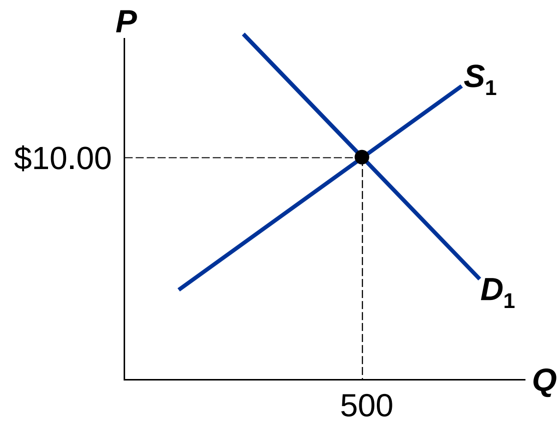
- Recall one of the Ten Principles from Chapter 1:
  Markets are usually a good way to organize economic activity.
- Prices are the signals that guide the allocation of society's resources. This allocation is altered when policymakers restrict prices.
- Price controls often intended to help the poor, but often hurt more than help.

Taxes

- The govt levies taxes on many goods & services to raise revenue to pay for national defense, public schools, etc.
- The govt can make buyers or sellers pay the tax.
- The tax can be a % of the good's price, or a specific amount for each unit sold.
  - For simplicity, we analyze per-unit taxes only.

EXAMPLE 3: The Market for Pizza

Eq' m
w/o tax



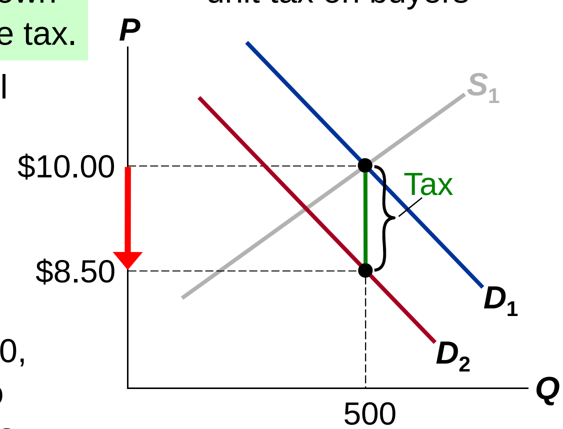
A Tax on Buyers

Hence, a tax on buyers shifts the ***D*** curve down by the amount of the tax.

P would have to fall by $1.50 to make buyers willing to buy same ***Q*** as before.

E.g., if ***P*** falls from $10.00 to $8.50, buyers still willing to purchase 500 pizzas.

Effects of a $1.50 per unit tax on buyers



A Tax on Buyers

<u>New eq'm:</u>

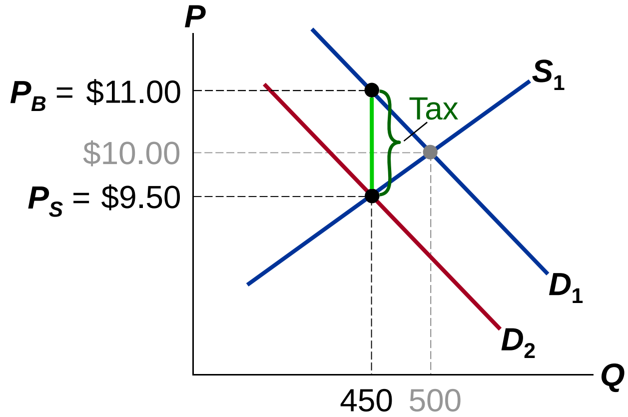
Q = 450

Sellers receive P_S = \$9.50

Buyers pay P_B = \$11.00

Difference between them = \$1.50 = tax

Effects of a \$1.50 per unit tax on buyers



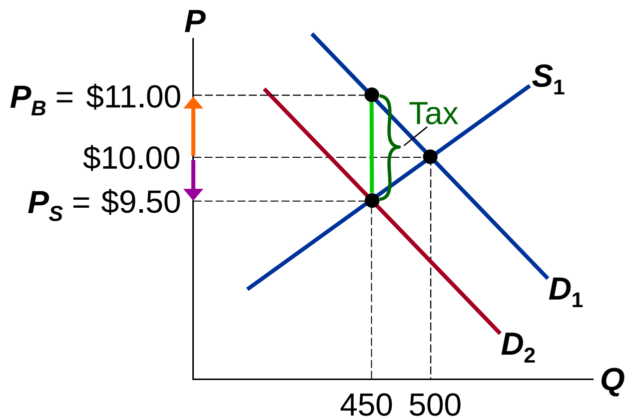
The **Incidence** of a Tax:

how the burden of a tax is shared among market participants

In our example,

buyers pay \$1.00 more,

sellers get \$0.50 less.

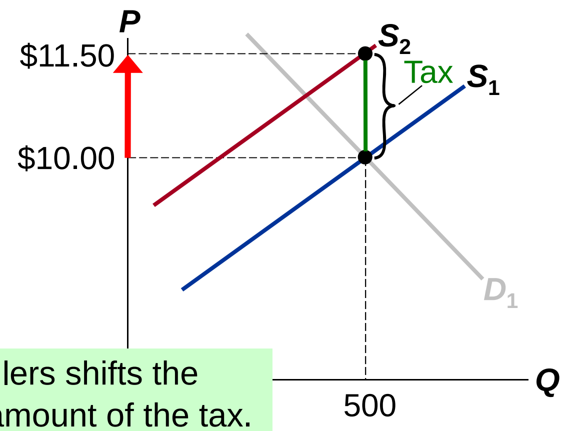


A Tax on Sellers

The tax effectively raises sellers' costs by $1.50 per pizza.

Sellers will supply 500 pizzas only if ***P*** rises to $11.50, to compensate for this cost increase.

Effects of a $1.50 per unit tax on sellers



Hence, a tax on sellers shifts the ***S*** curve up by the amount of the tax.

A Tax on Sellers

New eq'm:

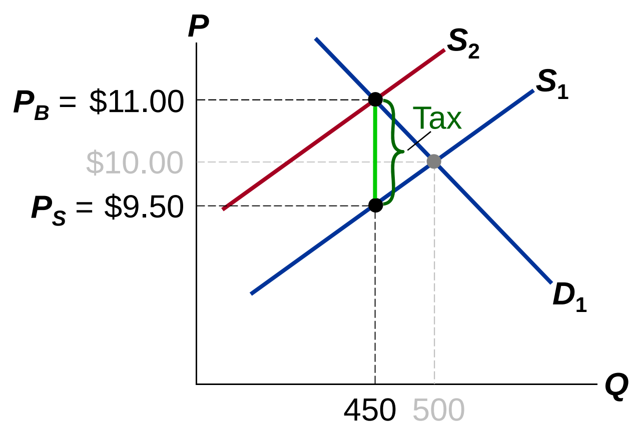
Q = 450

Buyers pay
P_B = $11.00

Sellers receive
P_S = $9.50

Difference between them
= $1.50 = tax

Effects of a $1.50 per unit tax on sellers

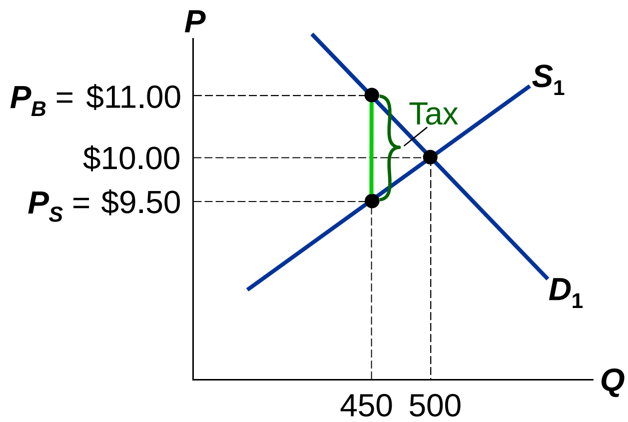


The Outcome Is the Same in Both Cases!

The effects on ***P*** and ***Q***, and the tax incidence are the same whether the tax is imposed on buyers or sellers!

What matters is this:

A tax drives a wedge between the price buyers pay and the price sellers receive.

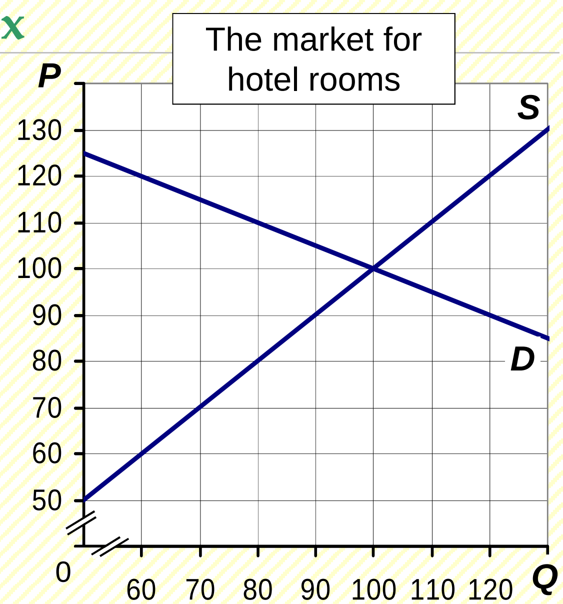


ACTIVE LEARNING ***2***

Effects of a tax

Suppose govt imposes a tax on buyers of $30 per room.

Find new ***Q***, P_B, P_S, and incidence of tax.



ACTIVE LEARNING **2**

Answers

Q = 80

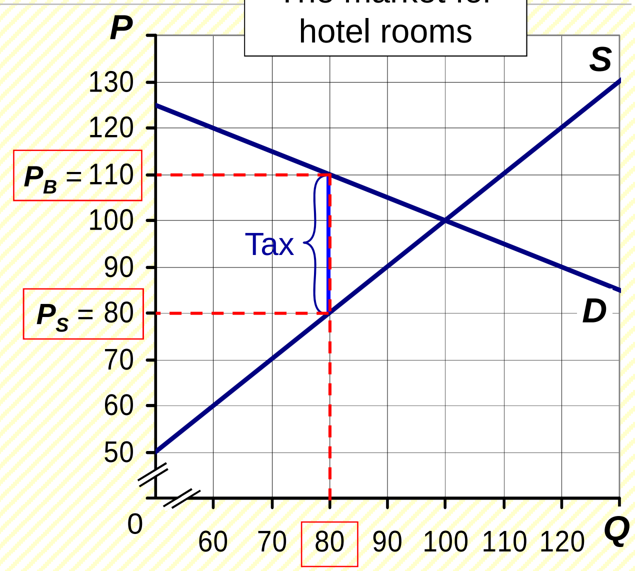
P_B = \$110

P_S = \$80

<u>Incidence</u>

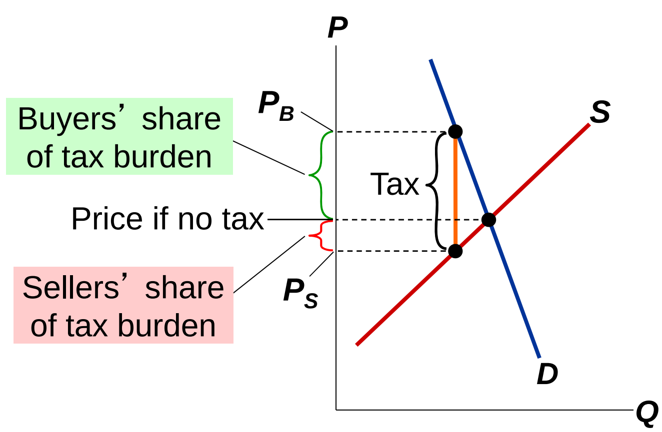
buyers: \$10

sellers: \$20



Elasticity and Tax Incidence

<u>CASE 1: Supply is more elastic than demand</u>

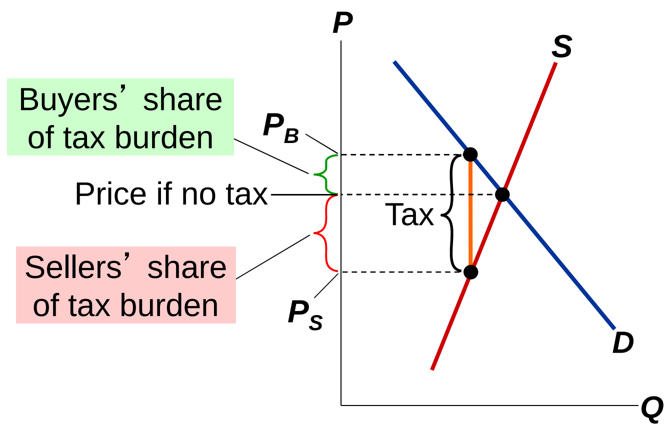


It's easier for sellers than buyers to leave the market.

So buyers bear most of the burden of the tax.

Elasticity and Tax Incidence

CASE 2: Demand is more elastic than supply



It's easier for buyers than sellers to leave the market.

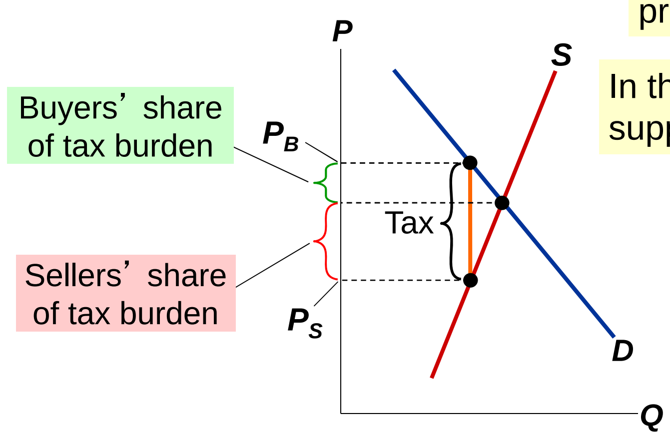
Sellers bear most of the burden of the tax.

CASE STUDY: Who Pays the Luxury Tax?

- 1990: Congress adopted a luxury tax on yachts, private airplanes, furs, expensive cars, etc.
- Goal of the tax: raise revenue from those who could most easily afford to pay – wealthy consumers.
- But who really pays this tax?

CASE STUDY: Who Pays the Luxury Tax?

The market for yachts



Demand is price-elastic.

In the short run, supply is inelastic.

Hence, companies that build yachts pay most of the tax.

CONCLUSION: Government Policies and the Allocation of Resources

- Each of the policies in this chapter affects the allocation of society's resources.
  - *Example 1:* A tax on pizza reduces eq'm ***Q***. With less production of pizza, resources (workers, ovens, cheese) will become available to other industries.
  - *Example 2:* A binding minimum wage causes a surplus of workers, a waste of resources.
- So, it's important for policymakers to apply such policies very carefully.

CHAPTER SUMMARY

- A price ceiling is a legal maximum on the price of a good. An example is rent control. If the price ceiling is below the eq'm price, it is binding and causes a shortage.
- A price floor is a legal minimum on the price of a good. An example is the minimum wage. If the price floor is above the eq'm price, it is binding and causes a surplus. The labor surplus caused by the minimum wage is unemployment.

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CHAPTER SUMMARY

- A tax on a good places a wedge between the price buyers pay and the price sellers receive, and causes the eq'm quantity to fall, whether the tax is imposed on buyers or sellers.
- The incidence of a tax is the division of the burden of the tax between buyers and sellers, and does not depend on whether the tax is imposed on buyers or sellers.
- The incidence of the tax depends on the price elasticities of supply and demand.

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