Unit 4: Supply, Demand and Government Policy

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Objectives

In this unit, 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 does the outcome 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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4.2 Price Control

4.3 Tax

4.1 Government Policies

- Free Market Issues:
  - ✓Market Price
  - ✓Externality
  - ✓Equity

➢ Principle 7: Government can improve market outcome

- Price controls
- Public Taxations

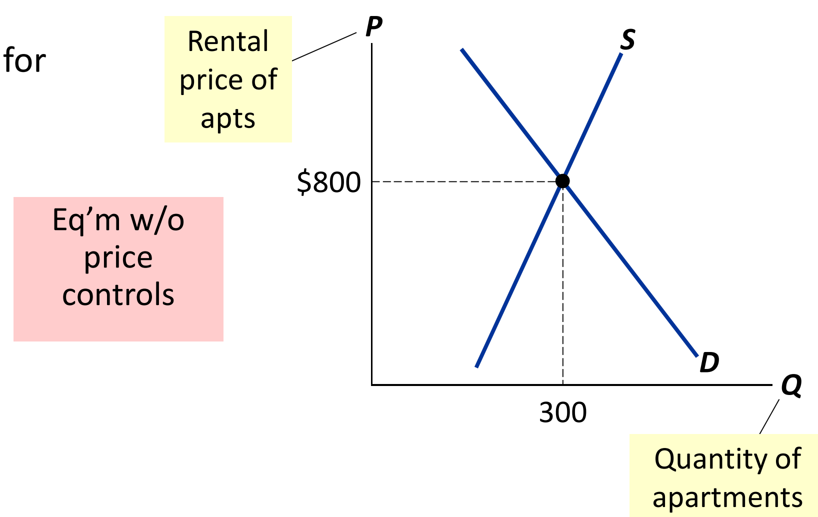
4.1 Government Policies

- 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).

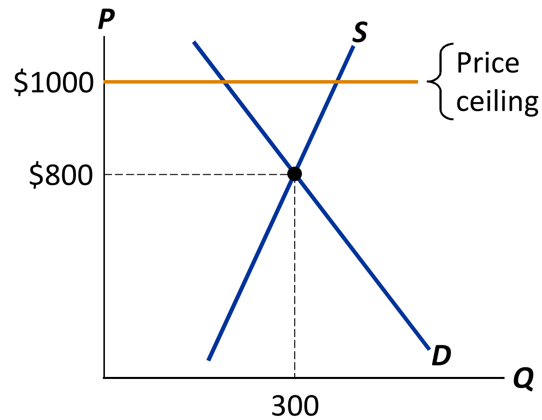
4.2 Price Control

EXAMPLE 1:
The Market for Apartments



How Price Ceilings Affect Market Outcomes

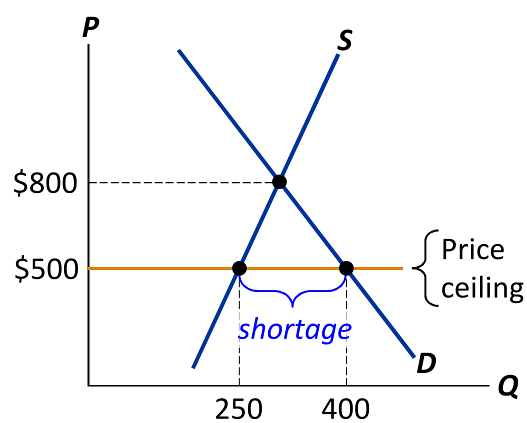
A price ceiling above the eq'm price is **not binding** – it has no effect on the market outcome.



How Price Ceilings Affect Market Outcomes

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

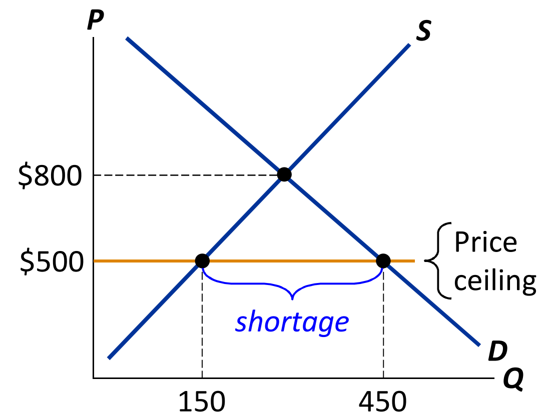
The ceiling is a **binding constraint** on the price, and causes a shortage.



How Price Ceilings Affect Market Outcomes

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

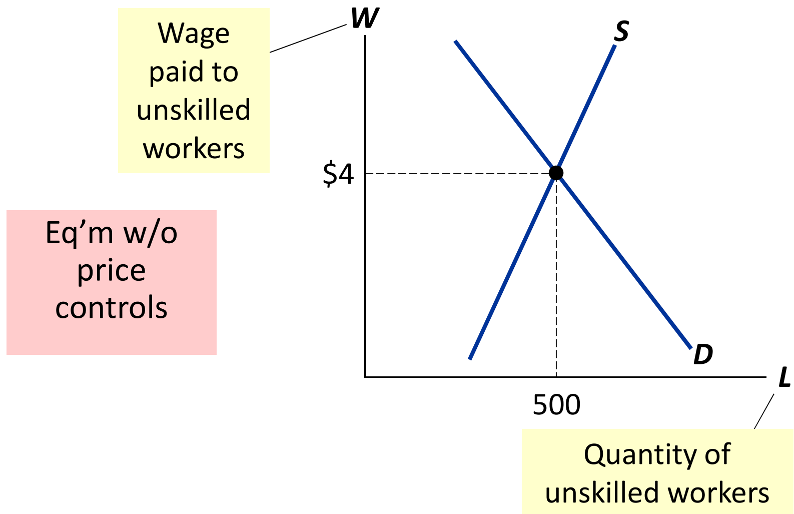
So, the shortage is larger.



Shortages and Rationing

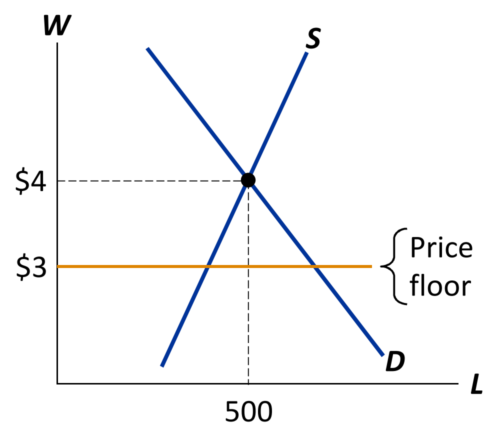
- With a shortage, sellers must ration the goods among buyers.
- Some rationing mechanisms:
  - (1) long lines
  - (2) discrimination according to sellers' biases
- These mechanisms are often unfair, and inefficient: the goods don't necessarily go to the buyers who value them most highly.
- In contrast, 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



How Price Floors Affect Market Outcomes

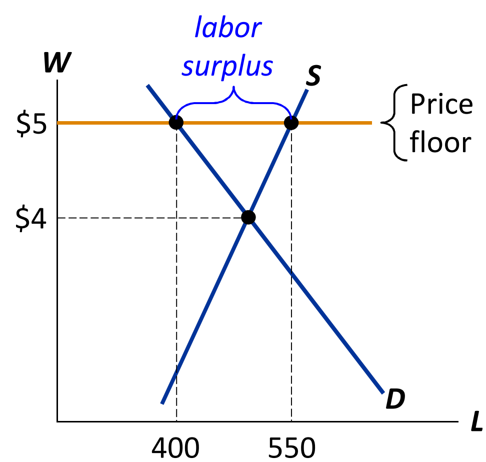
A price floor below the eq'm price is
not binding –
it has no effect on the market outcome.



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, and causes a surplus (*i.e.,* unemployment).

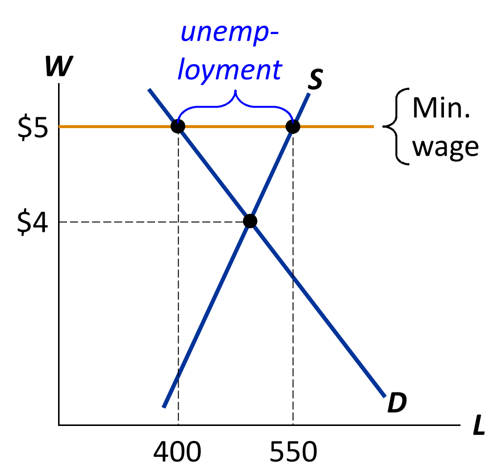


The Minimum Wage

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%.



Evaluating Price Controls

- Recall one of the Ten Principles: *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 are often intended to help the poor, but they often hurt more than help them:
  - The min. wage can cause job losses.
  - Rent control can reduce the quantity and quality of affordable housing.

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4.3 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 percentage of the good's price, or a specific amount for each unit sold.
  - For simplicity, we analyze per-unit taxes only.

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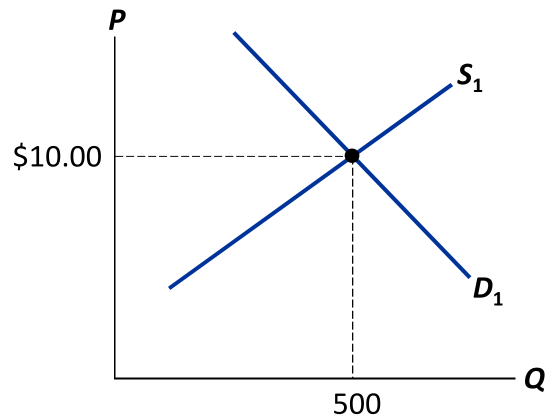
EXAMPLE 3: The Market for Pizza

Eq'm
w/o tax

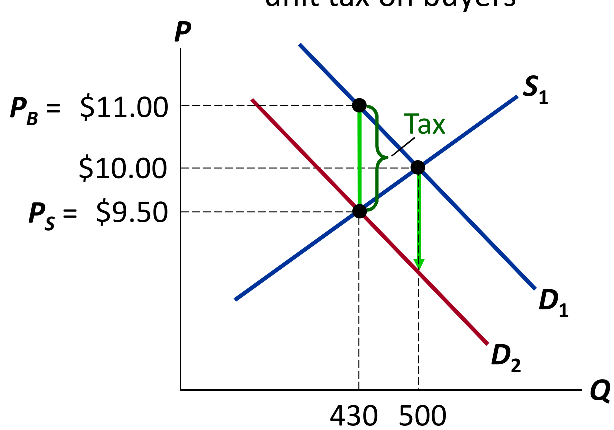


A Tax on Buyers

A tax on buyers shifts the ***D*** curve down by the amount of the tax.

The price buyers pay rises, the price sellers receive falls, eq'm ***Q*** falls.

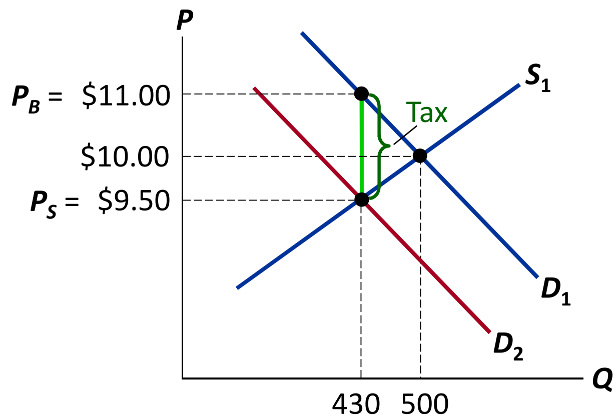
Effects of a $1.50 per unit tax on buyers



The Incidence of a Tax:

how the burden of a tax is shared among market participants

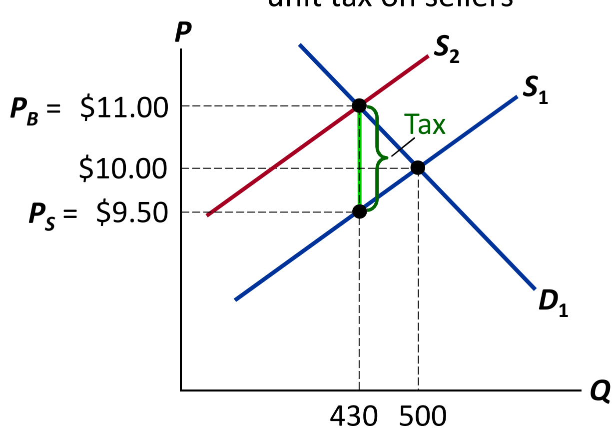
Because of the tax, buyers pay $1.00 more, sellers get $0.50 less.



A Tax on Sellers

A tax on sellers shifts the ***S*** curve up by the amount of the tax.

Effects of a $1.50 per unit tax on sellers



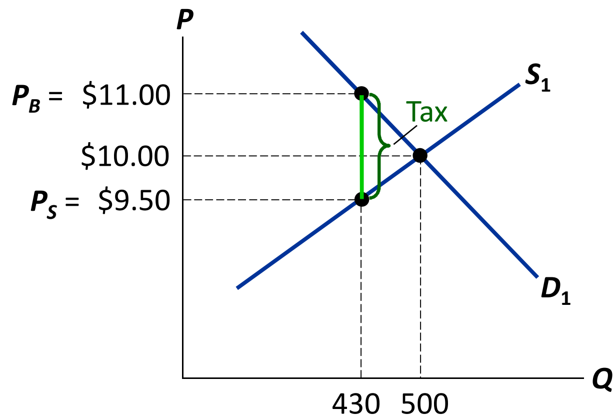
The price buyers pay rises, the price sellers receive falls, eq'm ***Q*** falls.

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!

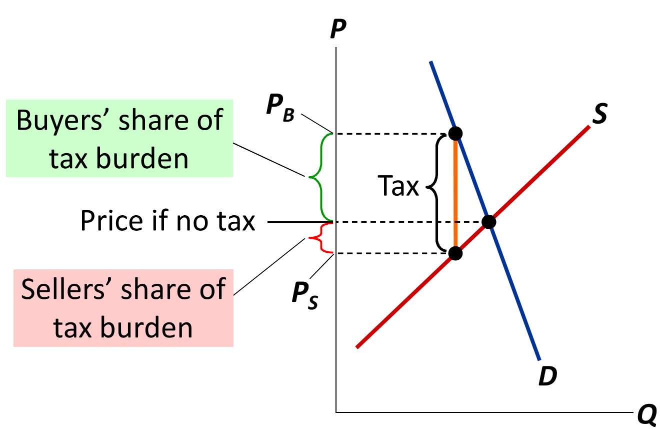
What matters is this:

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



Elasticity and Tax Incidence

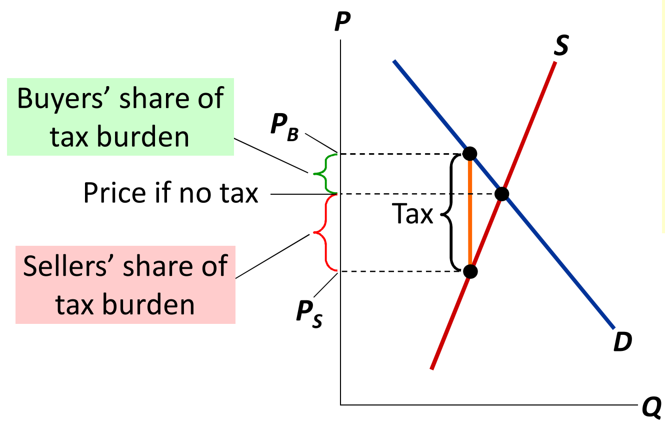
CASE 1: Supply is more elastic than demand



In this case, buyers bear most of the burden of the tax.

Elasticity and Tax Incidence

CASE 2: Demand is more elastic than supply



In this case, sellers bear most of the burden of the tax.

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Elasticity and Tax Incidence

- If buyers' price elasticity > sellers' price elasticity, buyers can more easily leave the market when the tax is imposed, so buyers will bear a smaller share of the burden of the tax than sellers.
- If sellers' price elasticity > buyers' price elasticity, the reverse is true.

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CASE STUDY: Who Pays the Luxury Tax?

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

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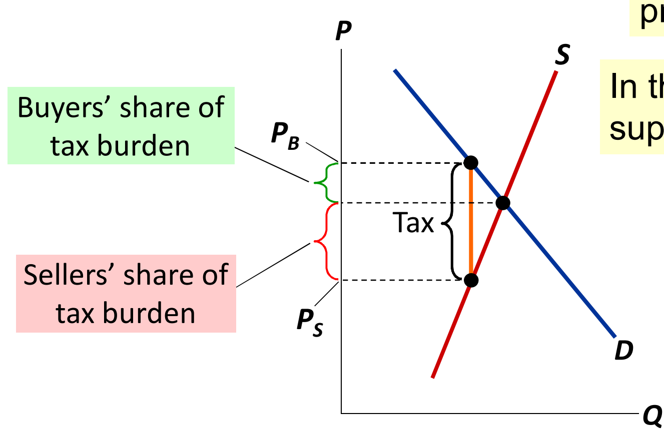
CASE STUDY: Who Pays the Luxury Tax?

<u>The market for yachts</u>



Demand is price-elastic.

In the short run, supply is inelastic.

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

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Government Policies and the Allocation of Resources

- Each of the policies in this unit affects the allocation of society's resources.
  - *Example 1:* a tax on pizza reduces the eq'm quantity of pizza. Since the economy is producing fewer pizzas, some 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.

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