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 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?

**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**

- **Price ceiling** above the eq’m price is not binding - has no effect on the market outcome.

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

The ceiling is a binding constraint on the price, causes a shortage.
CHAPTER 6 SUPPLY, DEMAND, AND GOVERNMENT POLICIES

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

Wage paid to unskilled workers

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 floors & ceilings**

Determine effects of:

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

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**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 often intended to help the poor, but often hurt more than help.

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**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

The Inccidence 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.

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.

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

$P_B = $11.00
$P_S = $9.50
$T_a = $1.50

A Tax on Sellers

A tax on sellers shifts the $S$ curve up 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 sellers

$P_B = $11.00
$P_S = $9.50
$T_a = $1.50

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.
### Elasticity and Tax Incidence

**CASE 1:** Supply is more elastic than demand

- **Price if no tax:** $80
- **Sellers’ share of tax burden:** $20
- **Buyers’ share of tax burden:** $10

It’s easier for sellers than buyers to leave the market. So buyers bear most of the burden of the tax.

**CASE 2:** Demand is more elastic than supply

- **Price if no tax:** $110
- **Sellers’ share of tax burden:** $20
- **Buyers’ share of tax burden:** $10

It’s easier for buyers than sellers to leave the market. Sellers bear most of the burden of the tax.

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### 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.

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### 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.

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.