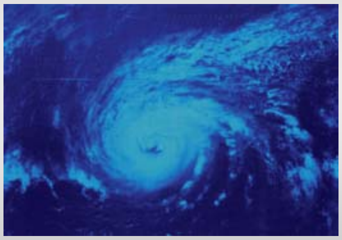
CHAPTER 5

# Using Supply and Demand



*It is by invisible hands that we are bent and tortured worst.*

***— Nietzsche***

McGraw-Hill/Irwin





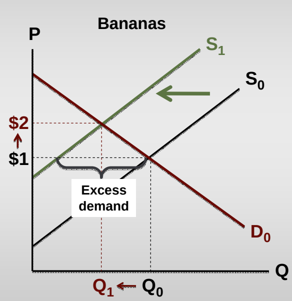
## Chapter Goals

- Explain real-world events using supply and demand
- Discuss how exchange rates are determined
- Demonstrate the effect of a price ceiling and price floor
- Explain the effects of excise taxes and tariffs
- Explain the effect of a third-party-payer system





## Application: Bananas in Australia




Cyclone Larry destroyed 80% of the banana crop

The cyclone damage caused the supply curve to shift left

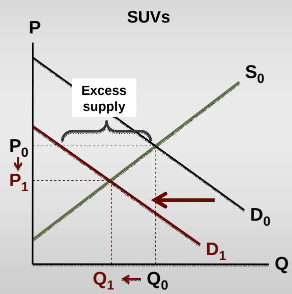
Price rose from $1 to $2 where quantity demanded = quantity supplied

## Application: Sales of SUVs in the U.S.

Gasoline in the U.S. is increasingly expensive

Increasing gas costs causes the demand curve to shift left

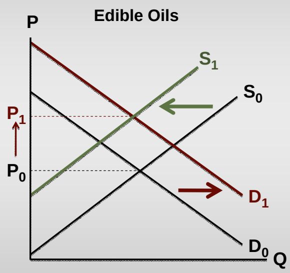
Price for SUVs fell from $P_0$ to $P_1$ where Q demanded = Q supplied








## Application: Edible Oils in the World




Growing middle class in Asia has increased demand for oils

At the same time, U.S. farmers are growing more corn and less soy (less soy oil)

The result is increased prices for edible oils





## The Price of a Foreign Currency

- The market for foreign currencies is called the foreign exchange (forex) market
- The **exchange rate** is the price of one currency in terms of another one
- People demand foreign currencies to buy those countries' goods and assets
- Exchange rates are determined by supply and demand

## Examples of U.S. dollar foreign-exchange rates

| Country *currency* | In US$ | Per US$ | US$ vs. YTD change (%) |
|---|---|---|---|
| **Mexico** *peso* | 0.0738 | 13.5520 | - 1.3 |
| **China** *yuan* | 0.1463 | 6.8348 | 0.2 |
| **United Kingdom** *pound* | 1.4828 | 0.6744 | - 1.6 |
| **Poland** *zloty* | 0.3032 | 3.2982 | 11.1 |
| **Israel** *shekel* | 0.2400 | 4.1667 | 10.3 |
| **Kuwait** *dinar* | 3.4376 | 0.2909 | 5.3 |





## Application: The Market for Euros

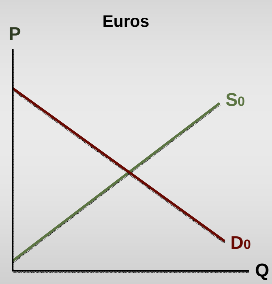
- The 16 members of the European Union use a common currency, the euro
- The value of a euro was $0.85 in 2001
- By the early 2000s the euro had risen to $1.50 because:
    1. U.S. interest rates decreased and Europeans bought fewer U.S. financial assets, so the **supply of euros decreased**
    2. Americans **increased their demand for euros** in order to buy European financial assets





## Application: The Market for Euros

The price is in terms of dollars, how many dollars it takes to buy or sell one euro

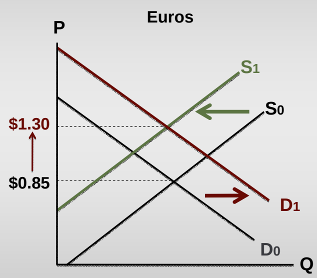



The quantity of euros is on the horizontal axis

The supply of euros represents people who want to sell euros and buy dollars

The demand for euros represents people who want to buy euros and sell dollars

## Application: The Market for Euros




Europeans buy fewer U.S. financial assets and supply decreases

Americans buy more European financial assets and demand increases

The price of euros increases to $1.30





## A Review of Changes in Supply and Demand

| | No change in Supply | Supply shifts out | Supply shifts in |
|---|---|---|---|
| **No change in Demand** | No Change | Price falls, Quantity rises | Price rises, Quantity falls |
| **Demand shifts out** | Price rises, Quantity rises | Quantity rises, Price could rise or fall | Price rises, Quantity could rise or fall |
| **Demand shifts in** | Price falls, Quantity falls | Price falls, Quantity could rise or fall | Quantity falls, Price could rise or fall |





## Government Intervention in the Market

- The invisible hand is not the only factor in determining prices, social and political forces also determine price
- Other factors include:
  - Price ceilings and price floors
  - Excise taxes
  - Quantity restrictions
  - Third-party-payer markets

## Price Ceiling

- When a government wants to hold prices down to favor buyers, it imposes a price ceiling
- A **price ceiling** is a government-imposed limit on how high a price can be charged
- Price ceilings create shortages
- Price ceilings below equilibrium price will have an effect on the market
- With price ceilings, existing goods are no longer rationed entirely by price so other methods of rationing arise



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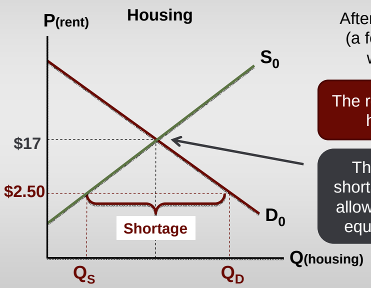
## Application: Rent Controls in Paris




After WWII, rent controls (a form of price ceiling) were put in place

The rent controls caused a housing shortage

There would not be a shortage if rents had been allowed to increase to the equilibrium price of $17



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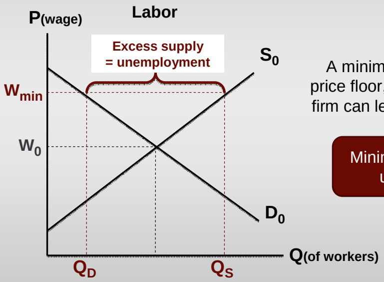
## Price Floor

- When a government wants to prevent a price from falling below a certain level to favor suppliers, it imposes a price floor
- A **price floor** is a government-imposed limit on how low a price can be charged
- Price floors create excess supply
- Price floors above equilibrium price will have an effect on the market

## Application: A Minimum Wage




A minimum wage is a type of price floor, it is the lowest wage a firm can legally pay an employee

Minimum wages cause unemployment





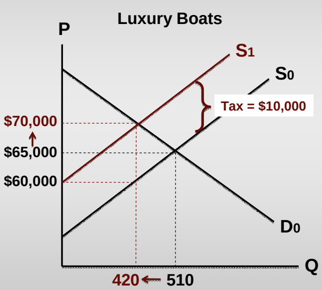
## Excise Taxes

- Government impacts markets through taxation
- An **excise tax** is a tax that is levied on a specific good
- A **tariff** is an excise tax on an imported good
- The result of taxes and tariffs is an increase in equilibrium prices and reduce equilibrium quantities





## Application: The Effect of an Excise Tax




Government imposes a $10,000 luxury tax on the suppliers of boats

The supply curve shifts up by the amount of the tax

The price of boats rises by less than the tax to $70,000

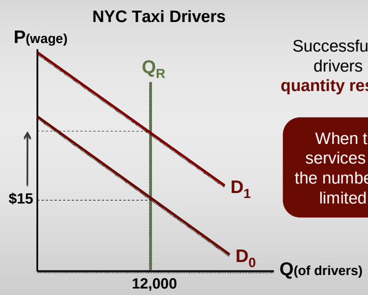
## Quantity Restrictions

- Government regulates markets with licenses, which limit entry into a market
- Many professions require licenses, such as doctors, financial planners, cosmetologists, electricians, or taxi cab drivers
- The results of limited number of licenses in a market are increases in wages and an increases in the price of obtaining the license





## Application: The Effect of a Quantity Restriction



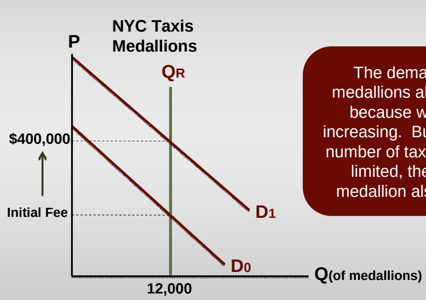

Successful lobbying by taxi cab drivers in NYC resulted in **quantity restrictions** (medallions)

When the demand for taxi services increased, because the number of taxi licenses was limited, wages increased





## Application: The Effect of a Quantity Restriction




The demand for taxi medallions also increased because wages were increasing. But because the number of taxi licenses was limited, the price of a medallion also increased

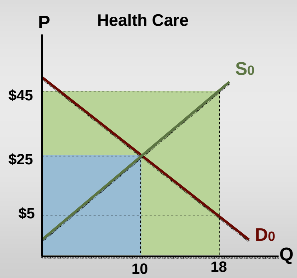
## Third-Party-Payer Markets

- In third-party-payer markets, the person who receives the good differs from the person paying for the good
- Under a third-party-payer system, the person who chooses how much to purchase doesn't pay the entire cost
- Equilibrium quantity and total spending can be much higher in third-party-payer markets
- Goods from a third-party-payer system will be rationed through social and political means





## Application: Third-Party-Payer Markets




With a copayment of $5, consumers demand 18 units

Sellers require $45 per unit for that quantity

Total expenditures for 18 units of health care

…are greater than when…

The consumer pays the entire cost





## Chapter Summary

- You can describe almost all events in terms of supply and demand
- The determination of foreign exchange rates can be analyzed with the supply and demand model
- Price ceilings, government imposed limits on how high a price can be charged, create shortages
- Price floors, government-imposed limits on how low a price can be charged, create surpluses

## Chapter Summary

- Taxes and tariffs paid by suppliers shift the supply curve up by the amount of the tax or tariff and increase equilibrium price and decrease quantity
- Price ceilings, government-imposed limits on how high a price can be charged, create shortages
- Price floors, government-imposed limits on how low a price can be charged, create surpluses





## Preview of Chapter 6:
**Thinking Like a Modern Economist**

- Differentiate traditional economic building blocks from behavioral economic building blocks
- Explain what heuristic models are and how traditional and behavioral heuristic economic models differ
- Distinguish an empirical model from a formal model and explain the advantages of each
- List three types of formal models used by modern economists
- Discuss how modern economics and traditional economics differ in their policy prescriptions