Can the President repeal the laws of supply and demand?
When you have completed your study of this chapter, you will be able to

1. Explain how a price ceiling works and show how a rent ceiling creates a housing shortage, inefficiency, and unfairness.

2. Explain how a price floor works and show how the minimum wage creates unemployment, inefficiency, and unfairness.

3. Explain how a price support in the market for an agricultural product creates a surplus, inefficiency, and unfairness.
7.1 PRICE CEILINGS

A **price ceiling or price cap** is a government regulation that places an *upper* limit on the price at which a particular good, service, or factor of production may be traded.

An example is a price ceiling on housing rents.

Trading *above* the price ceiling is *illegal*.
7.1 PRICE CEILINGS

A Rent Ceiling

A *rent ceiling* is a regulation that makes it illegal to charge more than a specified rent for housing.

The effect of a rent ceiling depends on whether it is imposed at a level above or below the market equilibrium rent.
7.1 PRICE CEILINGS

Figure 7.1 shows a housing market.

1. At the market equilibrium
2. The equilibrium rent is $550 a month and
3. The equilibrium quantity is 4,000 units of housing.

If a rent ceiling is set above $550 a month, nothing will change.
A rent ceiling is imposed at $400 a month, which is below the market equilibrium rent.

1. The quantity of housing supplied decreases to 3,000 units.
2. The quantity of housing demanded increases to 6,000 units.
3. A shortage of 3,000 units arises.
7.1 PRICE CEILINGS

When a rent ceiling creates a housing shortage, two developments occur:

- A black market
- Increased search activity

A **black market** is an illegal market that operates alongside a government-regulated market.

**Search activity** is the time spent looking for someone with whom to do business.
Figure 7.3 shows how a rent ceiling creates a black market and housing search.

With a rent ceiling of $400 a month:

1. 3,000 units of housing are available.

2. Someone is willing to pay $625 a month for the 3,000th unit of housing.
Range of black market rents or search costs

Willing to pay

Quantity of housing available
3. Black market rents might be as high as $625 a month and resources get used up in costly search activity.
7.1 PRICE CEILINGS

Are Rent Ceilings Efficient?

With a rent ceiling, the outcome is inefficient. Marginal benefit exceeds marginal cost. Total surplus—the sum of producer surplus and consumer surplus—shrinks and a deadweight loss arises.

People who can’t find housing and landlords who can’t offer housing at a lower rent lose.
7.1 PRICE CEILINGS

Figure 7.4(a) shows an efficient housing market.

1. The market is efficient with marginal benefit equal to marginal cost.

2. Consumer surplus plus ...

3. Producer surplus is as large as possible.
(a) Efficient housing market
Figure 7.4(b) shows the inefficiency of a rent ceiling.

A rent ceiling restricts the quantity supplied and marginal benefit exceeds marginal cost.

1. Consumer surplus shrinks.
2. Producer surplus shrinks.
(b) Inefficient housing market
3. A deadweight loss arises.

4. Other resources are lost in search activity and evading and enforcing the rent ceiling law.

Resource use is inefficient.
7.1 PRICE CEILINGS

Are Rent Ceilings Fair?

Are the rules fair?

Are the results fair?

Does blocking rent adjustments avoid scarcity?

What mechanisms allocate resources when prices don’t do the job?

Are those non-price mechanisms fair?
If Rent Ceilings Are So Bad, Why Do We Have Them?

Current renters gain and lobby politicians.

More renters than landlords, so rent ceilings can tip an election.
A **price floor** is a government regulation that places a *lower* limit on the price at which a particular good, service, or factor of production may be traded.

An example is the minimum wage in labor markets.

Trading *below* the price floor is *illegal*.
Figure 7.5 shows a market for fast-food servers.

1. The demand for and supply of fast-food servers determine the market equilibrium.

2. The equilibrium wage rate is $5 an hour.

3. The equilibrium quantity is 5,000 servers.
7.2 PRICE FLOORS

The Minimum Wage

A minimum wage law is a government regulation that makes hiring labor for less than a specified wage illegal. Firms can pay a wage rate above the minimum wage but they may not pay a wage rate below the minimum wage.

The effect of a minimum wage depends on whether it is set above or below the market equilibrium wage rate.
7.2 PRICE FLOORS

Figure 7.6 shows how a minimum wage creates unemployment.

A minimum wage is set above the equilibrium wage.

1. The quantity demanded decreases to 3,000 workers.

2. The quantity supplied increases to 7,000 people.

3. 4,000 people are unemployed.
Of the 4,000 people unemployed, 2,000 have been fired and another 2,000 would like to work at $7 an hour. The 3,000 jobs must somehow be allocated to the 7,000 people who would like to work.

This allocation is achieved by
- Increased search activity
- Illegal hiring
Figure 7.7 shows how a minimum wage increases job search.

1. At the minimum wage rate of $7 an hour, 3,000 jobs are available.

2. Someone is willing to take the 3,000th job for $3 an hour.
7.2 PRICE FLOORS

3. Illegal wage rates might range from just below $7 an hour to $3 an hour.

People are willing to spend time on job search that is worth the equivalent of lowering their wage rate by $4 an hour.

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7.2 PRICE FLOORS

Is the Minimum Wage Efficient?

The firms’ surplus and workers’ surplus shrink, and a deadweight loss arises.

Firms that cut back employment and people who can’t find jobs at the higher wage rate lose.

The total loss exceeds the deadweight loss because resources get used in costly job-search activity.
Figure 7.8(a) shows an efficient labor market.

1. At the market equilibrium, the marginal benefit of labor to firms equals the marginal cost of working.

2. The sum of the firms’ and workers’ surpluses is as large as possible.
(a) Efficient labor market
Figure 7.8(b) shows an inefficient labor market with a minimum wage.

The minimum wage restricts the quantity demanded.

1. The firms’ surplus shrinks.

2. The workers’ surplus shrinks.
(b) Inefficient labor market
3. A deadweight loss arises.

4. Other resources are used up in job-search activity.

The outcome is inefficient.
7.2 PRICE FLOORS

Is the Minimum Wage Fair?

Is the rule fair?

Is the result fair?

If the wage rate doesn’t allocate labor, what does?

Are non-wage allocation mechanisms fair?
7.2 PRICE FLOORS

If the Minimum Wage Is So Bad, Why Do We Have It?

The effects of minimum wage on employment might be small.

What would make the effects on employment small?

Labor unions might lobby for a minimum wage: why?
To support farms, governments most always:

- Isolate the domestic market from global competition.
- Introduce a price floor.
- Pay the farmers a subsidy.
Isolate the Domestic Market

A government cannot regulate the market price of a farm product without isolating the domestic market from the global market.

To isolate the domestic market, the government restricts imports from the rest of the world.
7.3 PRICE SUPPORTS IN AGRICULTURE

Introduce a Price Floor

A price support is a price floor in an agricultural market maintained by a government guarantee to buy any surplus output at that price.

A price floor set above the market equilibrium price creates a surplus.

To maintain the price, the government buys the surplus.
7.3 PRICE SUPPORTS IN AGRICULTURE

Pay Farmers a Subsidy

A subsidy is a payment by the government to a producer to cover part of the cost of production.

When the government buys the surplus produced by farmers, it provides them with a subsidy.

Given the surplus produced, farms would not cover their costs without a subsidy.
Figure 7.9 shows how a price support works in the market for sugar beets.

1. With no price support, the competitive equilibrium price is $25 a ton and 25 million tons a year are grown.
The diagram illustrates the market for a good, showing the relationship between price and quantity. The demand curve (D) and the supply curve (S) intersect at the competitive equilibrium price of $35 per ton and a quantity of 20 million tons per year. The support price is set at a higher price level to ensure a minimum price for producers. The area between the demand and supply curves, shaded in pink, represents the deadweight loss due to the support price. The subsidy is indicated by the shaded area below the demand curve and above the support price line, with the consumption and production levels marked at 20 million tons and 50 million tons respectively.
2. A price support is set at $35 a ton.
3. The quantity produced is 30 million tons a year.
4. The quantity bought by domestic users is 20 million tons a year.
5. The government buys the surplus of 10 million tons at $35 a ton—a subsidy of $350 million a year.
6. A deadweight loss arises.
7.3 PRICE SUPPORTS IN AGRICULTURE

7. The DWL area shown, is a lower bound estimate, assuming that surplus quantity is distributed (donated) to the buyers who value it most highly.

8. If the surplus quantity is thrown away, then the DWL is the entire area under the supply curve, between 20 and 30.
The price support increases farmers’ revenue.

With no price support, farmers receive $625 billion (25 million tons multiplied by $25 a ton).

With the price support, farmers receive $1,050 billion (30 million tons multiplied by $35 a ton).

The price support is inefficient because it creates deadweight loss—farmers gain and buyers lose but buyers lose more than farmers gain.
7.3 PRICE SUPPORTS IN AGRICULTURE

Effects on the Rest of the World

The rest of the world receives a double-whammy from price supports:

1. Import restrictions in advanced economies deny developing economies access to markets in the advanced economies.

   The result is lower prices and smaller farm production in developing countries.

2. Advanced economies sell their surpluses on the world market, which lowers the prices of farm products in the rest of the world even further.
The President’s pen is powerful, but it holds no magical powers.

When the President signs a Bill or an Executive Order to bring in a new law or regulation, the outcome is not always exactly what was intended.

A mismatch between intention and outcome is almost inevitable when a law or regulation seeks to block the laws of supply and demand.

You’ve seen that the federal minimum wage law leaves some teenagers without jobs.

Problems would also arise if a law tried to cap executive pay.
Placing a cap on executive pay would work like putting a ceiling on home rents.

The quantity of executive services supplied would decrease and the most talented executives would seek jobs with the unregulated employers.

The firms in the most difficulty would face the added challenge of recruiting and keeping competent executives and directors.

The deadweight loss from this action would be large.