

chapter 4

The Market Strikes Back

Chapter Objectives

Students will learn in this chapter:

- The meaning of price controls and quantity controls, two kinds of government intervention in markets.
- How price and quantity controls create problems and make a market inefficient.
- Why economists are often deeply skeptical of attempts to intervene in markets.
- Who benefits and who loses from market interventions, and why they are used despite their well-known problems.

Chapter Outline

Opening Example: Rent control and taxi licenses are given as examples of what happens when the logic of the market is defied by government intervention.

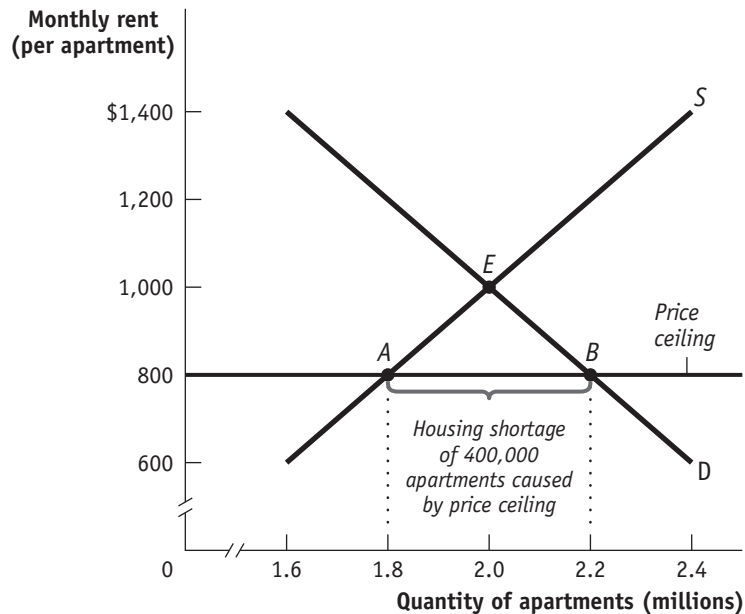
I. Price Controls

- Definition:* A **price control** is a legal restriction on how high or low a market price may go.
- Price controls are enacted by governments in response to political pressures from buyers and sellers.

II. Price Ceilings

- Definition:* A **price ceiling** is a maximum price sellers are allowed to charge for a good.
- Modeling a price ceiling: A price ceiling is set below the equilibrium price. A price ceiling set above the equilibrium price has no effect. This is illustrated in text Figure 4-2, shown on the next page.

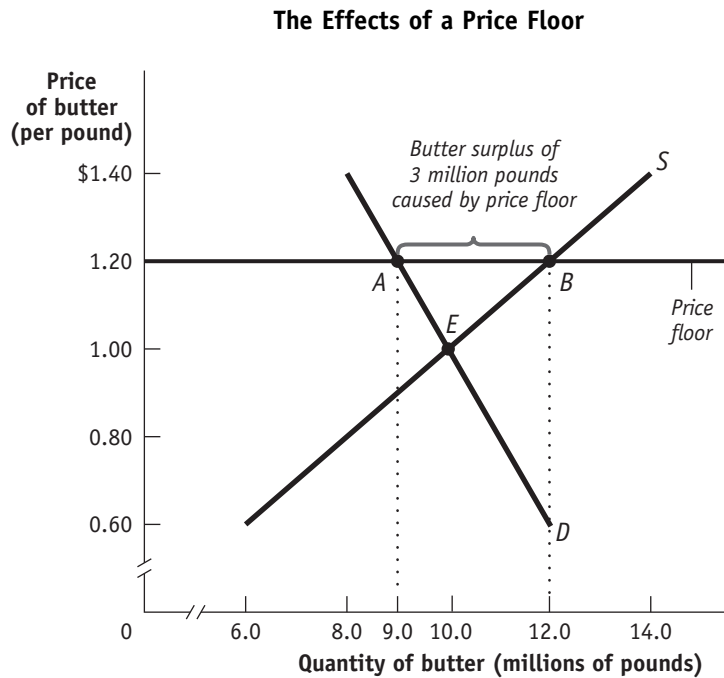
The Effects of a Price Ceiling



- D. Definition:** A market or an economy is **inefficient** if there are missed opportunities: Some people could be made better off without making other people worse off.
- E.** Price ceilings often lead to inefficiency in the form of
- 1. Inefficient allocation to consumers:** People who want the good badly and are willing to pay a high price don't get it, and those who care relatively little about the good and are only willing to pay a low price do get it.
 - 2. Wasted resources:** People spend money and expend effort in order to deal with the shortages caused by the price ceiling.
 - 3. Inefficiently low quality:** Sellers offer low-quality goods at a low price even though buyers would prefer a higher quality at a higher price.
- F.** Price ceilings also lead to illegal markets.
- 1. Definition:** An **illegal market** is a market in which goods or services are bought and sold illegally—either because it is illegal to sell them at all or because the prices charged are legally prohibited by a price ceiling.
- G.** Price ceilings are enacted because
- 1.** They do benefit some people.
 - 2.** When they have been in effect for a long time, buyers may not have a realistic idea of what would happen without them.
 - 3.** Government officials often do not understand supply and demand analysis.

III. Price Floors

- A. *Definition:* A **price floor** is a minimum price buyers are required to pay for a good.
- B. *Definition:* The **minimum wage** is a legal floor on the wage rate, which is the market price of labor.
- C. Price floors lead to **excess supply**; the quantity supplied is greater than quantity demanded at the set price. Price floors are ineffective if set below the equilibrium price.
- D. Modeling a price floor: Graphically, a price floor is a price set at a price that is above the equilibrium price. This is illustrated in text Figure 4-5, shown below.



- E. Price floors often lead to
1. **Inefficiently low quantity:** Since a price floor raises the price of a good to consumers, quantity demanded falls, so the quantity bought and sold falls.
 2. **Inefficient allocation of sales** among sellers: Those who would be willing to sell the good at the lowest price are not always those who actually manage to sell it.
 3. Wasted resources. Government price floors set above the equilibrium price cause surpluses which the government buys and destroys. Minimum wages result in fewer jobs available and so would-be workers waste time searching for a job.
 4. Goods of **inefficiently high quality:** Sellers offer high-quality goods at a high price, even though buyers would prefer a lower quality at a lower price.
 5. Illegal activity.
- F. Government officials often disregard warnings about the consequences of price floors, either because they believe that the relevant market is poorly described

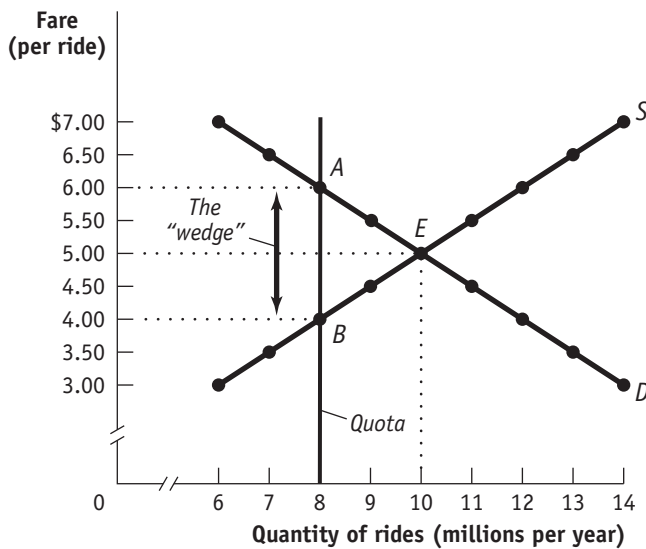
by the supply and demand model or, more often, because they do not understand the model.

1. Minimum wage laws are an example of price floors. Relatively high minimum wages in Europe lead to higher levels of unemployment and illegal markets in labor. In contrast, the minimum wage in the United States is set closer to the equilibrium wage, and labor is relatively more productive in the United States.

IV. Controlling Quantities

- Definition:** A **quantity control**, or **quota**, is an upper limit on the quantity of some good that can be bought or sold. The total amount of the good that can be legally transacted is the quota limit.
- Definition:** A **license** gives its owner the right to supply the good.
- Definition:** The **demand price** of a given quantity is the price at which consumers will demand that quantity.
- Definition:** The **supply price** of a given quantity is the price at which producers will supply that quantity.
- Modeling a quantity control.** This is shown graphically by a vertical line set at the quantity limit, as illustrated in text Figure 4-8, shown below.

Effect of a Quota on the Market for Taxi Rides



Fare (per ride)	Quantity of rides (millions per year)	
	Quantity demanded	Quantity supplied
\$7.00	6	14
6.50	7	13
6.00	8	12
5.50	9	11
5.00	10	10
4.50	11	9
4.00	12	8
3.50	13	7
3.00	14	6

- Definition:** A quantity control, or quota, drives a **wedge** between the demand price and the supply price of a good. The difference between the demand and supply price is the **quota rent**, the earnings that accrue to the license-holder from ownership of the right to sell the good. It is equal to the market price of the license when the licenses are traded.
- The opportunity costs of quantity controls are
 1. Inefficiencies, or missed opportunities, in the form of mutually beneficial transactions that don't occur.
 2. Incentives for illegal activities.
- Taxi medallions in New York City and clam fishing in New Jersey are given as examples of quota controls.

Teaching Tips

Price Ceilings

Creating Student Interest

Ask students if they think a cap (price ceiling) on tuition is a good idea. Discuss how a tuition maximum might affect quantity demanded, quantity supplied and the quality of classes at their school.

Presenting the Material

Consider this concrete example to illustrate a price ceiling.

Rent	Quantity demanded (units rented per month)	Quantity supplied (units for rent monthly)
\$1,400	1,000	2,000
\$1,200	1,100	1,500
\$1,000	1,200	1,200
\$800	1,500	1,000
\$600	1,800	750
\$400	2,100	600

1. If a price ceiling of \$800 is set on apartment rentals, how much of a shortage is created? (500 units)
2. How would this shortage manifest itself in the market? (In the short run, many renters will be unable to find an apartment. In the long run, there will be a lack of construction of new apartment buildings.)

How does a price ceiling of \$800 “defy the logic of the market”? (The market is dictating an equilibrium price of \$1,000, which would not result in a shortage.)

Price Floors

Creating Student Interest

Ask the class if anyone knows how much the federal minimum wage is. Ask the class if anyone is (or ever has, or knows someone who is) earning the minimum wage. What about a wage above the minimum wage? Below it? (Be careful here—many college students have jobs waiting tables at restaurants; they are paid below the minimum wage, but are expected to make the minimum when tips are included). Do they think the minimum wage should be raised? Why or why not? Be clear that the answer is **normative**. Use this discussion to segue into the presentation of the effects of a minimum wage on the market.

Presenting the Material

Consider this concrete example to illustrate a price floor.

Wage	Quantity of labor demanded	Quantity of labor supplied
\$6.75	300	500
\$6.00	400	400
\$5.75	500	300
\$5.50	550	200
\$5.00	600	100
\$4.75	650	50

1. What is the equilibrium wage rate? (\$6.00)
2. If a price floor is set at \$6.75 (minimum wage), how much of a surplus of unemployed workers will be created? (200)

Controlling Quantities**Creating Student Interest**

Ask students why New York City would want to have a law to limit the quantity of taxi licenses issued. What are the pros and cons of such a law? Give other examples of quantity controls, such as fishing catch limits and quotas on imported goods.

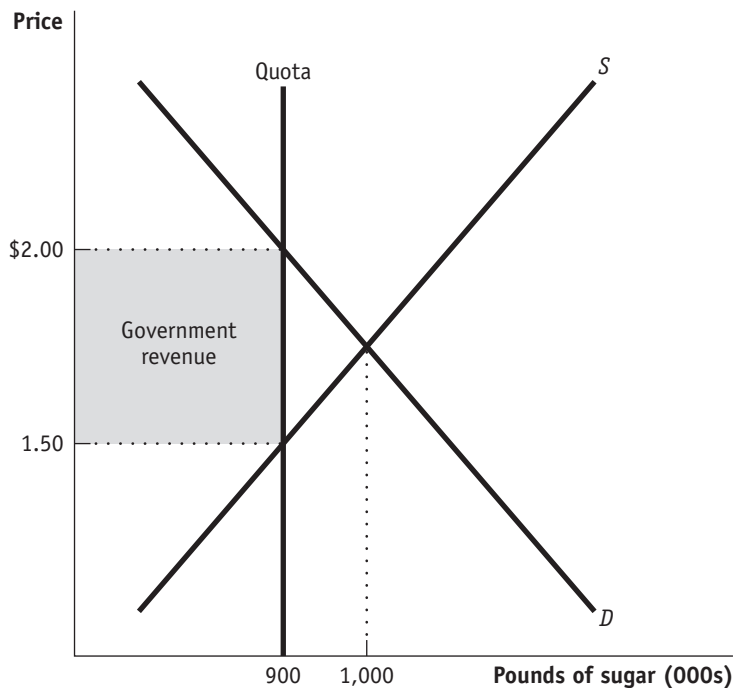
Presenting the Material

Consider this concrete example to illustrate quantity controls.

Sugar market (U.S. domestic market without sugar quotas)

Price (per pound)	Quantity demanded (thousands of pounds)	Quantity supplied (thousands of pounds)
\$3.00	600	1,400
\$2.75	700	1,300
\$2.50	800	1,200
\$2.00	900	1,100
\$1.75	1,000	1,000
\$1.50	1,500	900

In the absence of a quota, the equilibrium quantity will be 1,000,000 pounds. Let's say the government restricts the quantity of imported sugar and the quantity limitation is now set at 900,000 pounds. The effect of the quota is shown in the following graph.



With the quota, 900,000 pounds will be sold at a price of \$2.00. \$2.00 is the demand price for 900,000 pounds. Domestic producers of sugar get a quota rent of \$.50 per pound of sugar. Ask students to brainstorm who wins and who loses from the quota.

Common Student Pitfalls

- **Identifying where effective ceilings and floors are placed.** Since ceilings are high, it is easy for students to think they must be above equilibrium. And since floors are low, it is easy for students to think they must be below equilibrium. Help students understand where a ceiling/floor must be to be effective by using an example. What if equilibrium price is \$10 and the government sets a price floor at \$8, that is, it says “You may not buy or sell for less than \$8?” How will the market respond? Buyers and sellers will say “I’m not; I’m buying/selling for \$10 (which is NOT below \$8) so go away and leave me alone.” Make it clear that the market will not automatically go to the price floor. Markets go to equilibrium and stay there unless the law prevents them from doing so. A floor of \$12 would have an effect—it would force the market to move to \$12 to avoid violating the law. Explain that a price floor below equilibrium will have no effect (and they should check this out before doing extensive analysis of an ineffective price floor on an exam!).

The same explanation works for price ceilings. What if equilibrium price is \$10 and the government sets a price ceiling at \$12; that is, it says, “You may not buy or sell for more than \$12?” How will the market respond? Buyers and sellers will say “I’m not; I’m buying/selling for \$10 (which is NOT above \$8) so go away and leave me alone.” Make it clear that the market will not automatically go to the price ceiling. Markets go to equilibrium and stay there unless the law prevents them from doing so. A ceiling of \$8 would have an effect—since it would force the market to move to \$8 to avoid violating the law. Explain that a price ceiling above equilibrium will have no effect (and they should check this out before doing extensive analysis of an ineffective price floor on an exam!).

- **Product versus labor markets and the minimum wage.** Since students have not yet been formally introduced to a labor market, they may be confused by the minimum wage graph. Explain to them that market works essentially the same way, but the labels are different. Households *supply* the labor and businesses *demand* it (there has been a change in roles from the product market). The price of labor is called the wage and quantity refers to employment level—the number of workers or hours, or some measure of labor. There is an inverse relationship between price and quantity demanded (the law of demand still applies in the labor market) and there is a positive relationship between price and the quantity of labor households are willing to supply.
- **Quotas (or quantity controls).** Make clear that with quotas (or quantity controls) we have moved to discussing limits on Q rather than P.

Case Studies in the Text

Economics in Action

Hard Shopping in Caracas—This EIA explains how price controls in Venezuela have affected the availability of imported and staple goods.

Ask students the following questions:

1. What was the goal of the price controls Hugo Chavez's government placed on basic foods in Venezuela? (To hold down the cost of living)
2. What were the actual consequences of the price controls? (Shortages of necessities, availability of imported luxury goods, illegal markets)

"Black Labor" in Southern Europe—This EIA explains how binding minimum wages in other countries have led to high unemployment and evasion of the minimum wage law. Illustrate on two supply and demand diagrams the differences between European and U.S. minimum wage laws incorporating these facts.

1. Higher productivity of labor in the United States relative to Europe.
2. A larger unemployment effect in Europe. (The demand for labor will be higher in the United States, and the minimum wage in the United States is closer to the equilibrium wage.)

The Clams of New Jersey—This EIA looks at the effects of quotas on clam fishing in New Jersey.

1. Why did New Jersey institute a clam quota? (Excessive fishing threatened to wipe out the clam beds.)
2. What were the consequences of the clam quota? (Fishing was reduced as licenses became necessary to fish. Some boat owners make more from renting out their licenses than using them to fish.)

For Inquiring Minds

Rent Control Mumbai Style—This EIA looks at extreme effects of rent control in Mumbai, India.

Price Floors and School Lunches—This EIA uses grade school lunches to explain the effects of a price floor.

Global Comparison

Check Out Our Low, Low Wages!—This Global Comparison provides a comparison of minimum wages in six countries.

Activities

Rent Control (10–15 minutes)

Pair students and ask them to brainstorm the pros and cons of rent control laws. Ask them to share their arguments with the whole class. Additional discussion questions are

How is this issue an example of the trade-off between equity (fairness) and efficiency?

How do rent control laws cause the “market to strike back”?

Price Ceilings and Essential Goods (3–5 minutes)

Pair students to discuss the following scenario:

During the Northridge earthquake in Los Angeles County, water was in short supply in the Valley and the price of bottled water skyrocketed. The city invoked a state law which prohibits businesses from charging more than 5% extra for certain “essential goods” 30 days after a natural disaster. Ask students: should a state be able to put price ceilings on “essential” goods following a natural disaster, or should market prices prevail?

Prescription Medicines (15–30 minutes)

In class, bring up the issue of putting price ceilings on prescription medicine. Assign students to small groups and have them critically analyze the pros and cons of this issue.

Quantity Control of Sugar Imports (5–10 minutes)

Divide the class into two parts. Explain that the United States has quantity limits on the amount of sugar that can be imported into the United States. The purpose of the limit is to protect U.S. sugar growers. Ask half the class to write down the benefits of the quantity control and the other to brainstorm the opportunity costs of the control. Then ask students to find another student in the room to discuss the pros and cons. Ask a few of the pairs to report.

Web Resources

The following U.S. Department of Labor website gives information about the federal minimum wage: <http://www.dol.gov/esa/whd/flsa/>.

The Department of Homeland Security, Customs and Border Protection web page provides information on U.S. import quotas (particularly in textiles and agriculture): <http://www.cbp.gov>.

