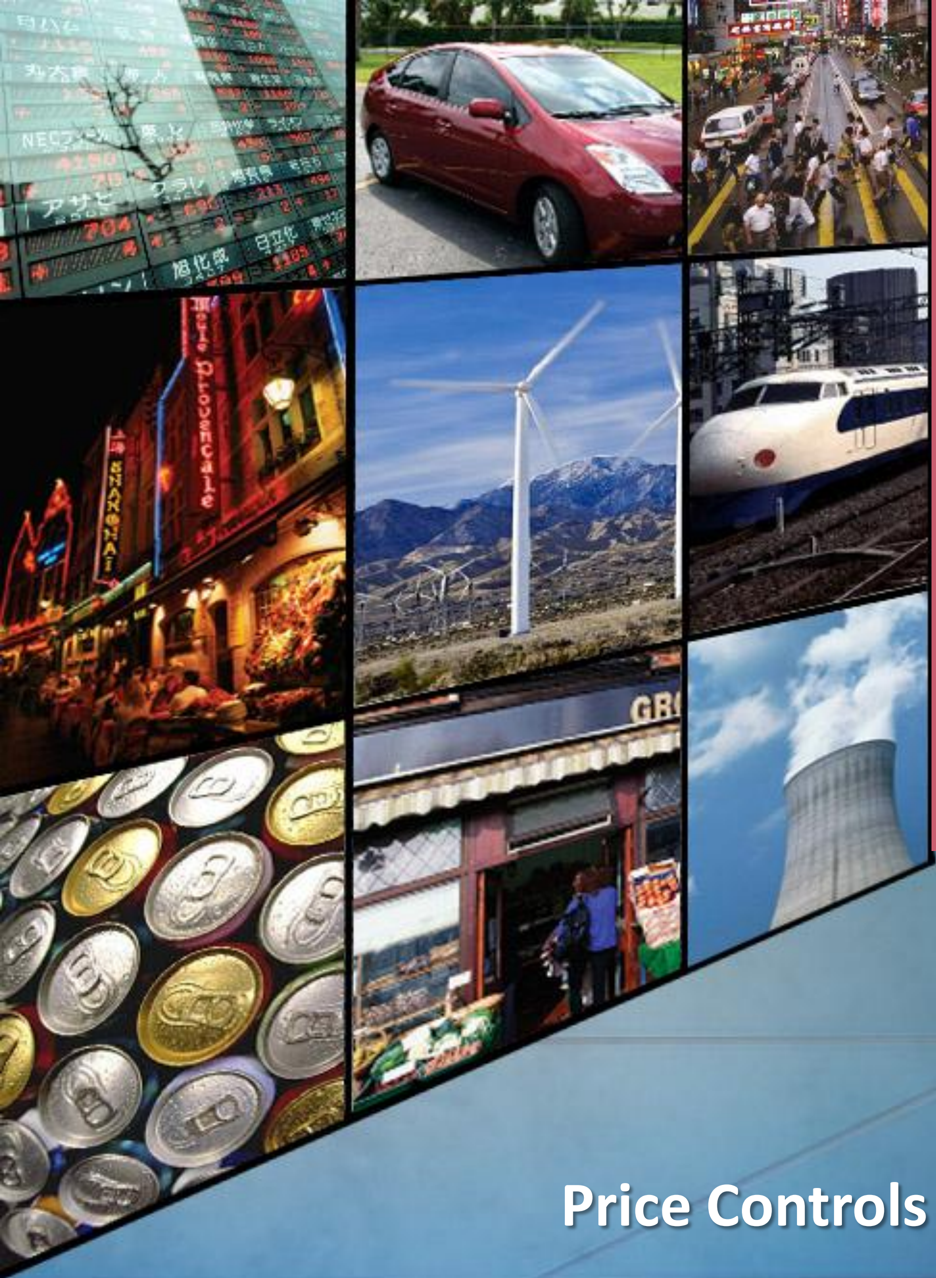


THIRD EDITION

ECONOMICS and MICROECONOMICS

Paul Krugman | Robin Wells

Chapter 5

Price Controls and Quotas: Meddling with Markets

WHAT YOU WILL LEARN IN THIS CHAPTER

- The meaning of **price controls** and **quantity controls**, two kinds of government interventions in markets
- How price and quantity controls create problems and can make a market inefficient
- What **deadweight** loss is
- Why the predictable side effects of intervention in markets often lead economists to be skeptical of its usefulness
- Who benefits and who loses from market interventions, and why they are used despite their well-known problems

Why Governments Control Prices

- The market price moves to the level at which the quantity supplied equals the quantity demanded. But, this equilibrium price does not necessarily please either buyers or sellers.

- Therefore, the government intervenes to regulate prices by imposing **price controls**, which are legal restrictions on how high or low a market price may go.

- **Price ceiling** is the maximum price sellers are allowed to charge for a good or service.

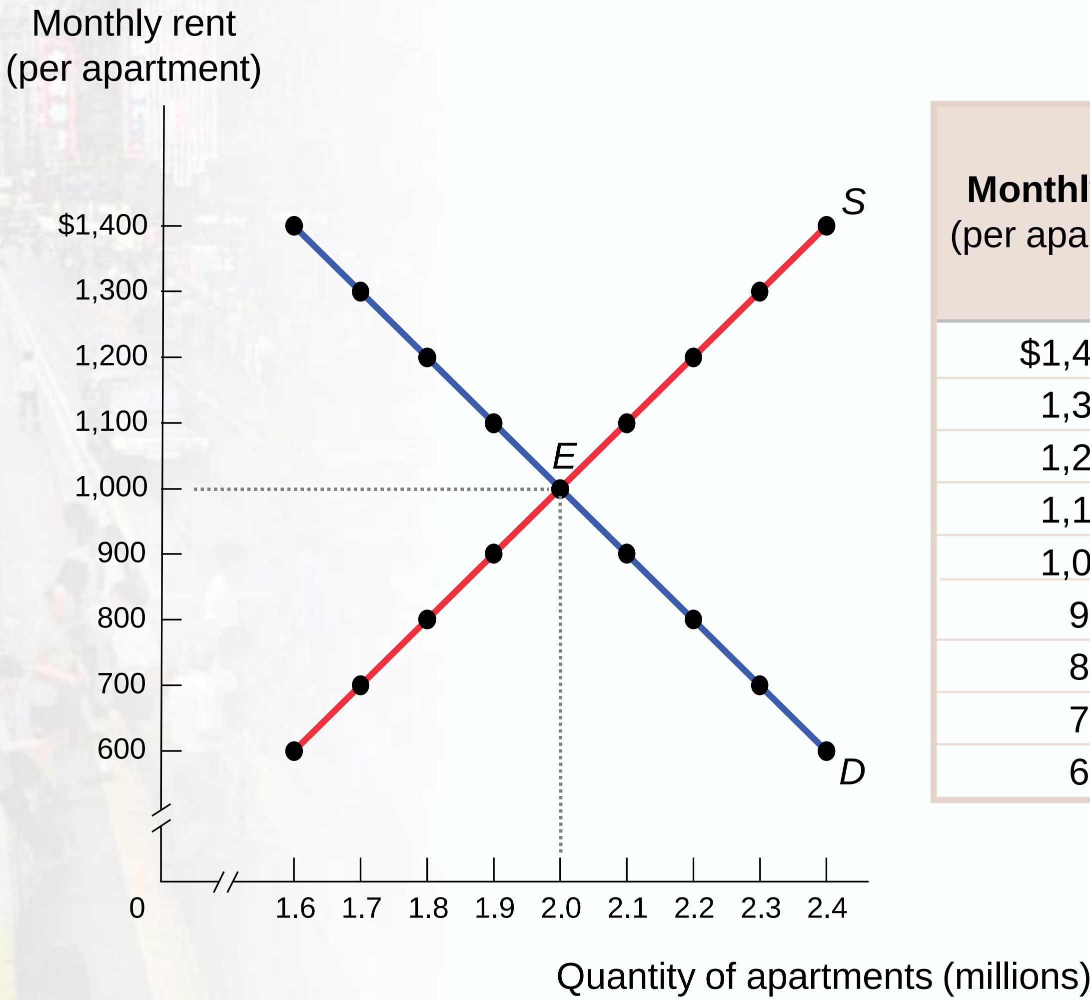
- **Price floor** is the minimum price buyers are required to pay for a good or service.

Price Ceilings

- Price ceilings are typically imposed during crises—wars, harvest failures, natural disasters—because these events often lead to sudden price increases that hurt many people but produce big gains for a lucky few.

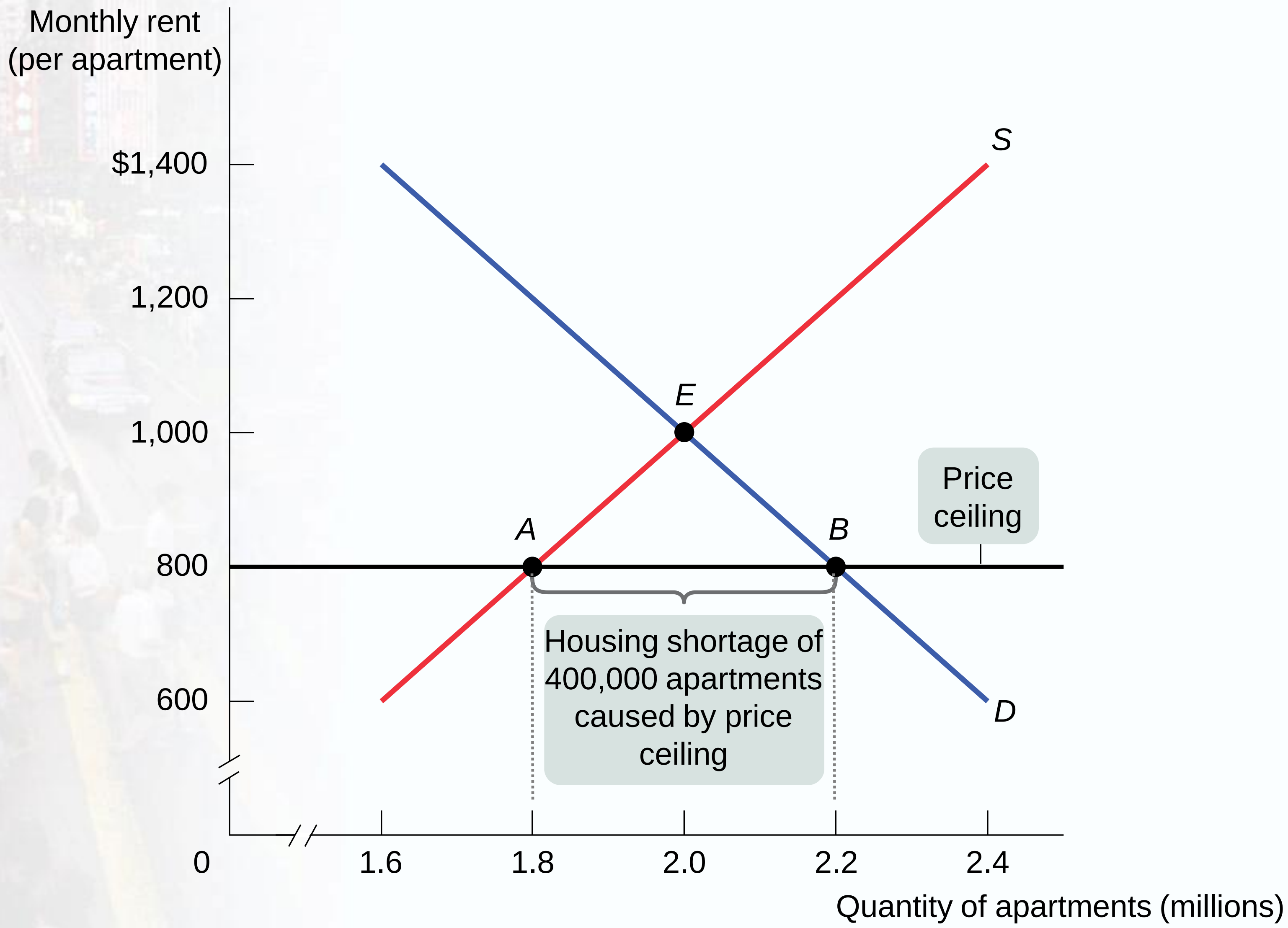
- Examples:
  - U.S. government–imposed ceilings on aluminum and steel during World War II
  - Rent control in New York City

The Market for Apartments in the Absence of Government Controls



Monthly rent (per apartment)	**Quantity of apartments** (millions)	
	Quantity demanded	Quantity supplied
$1,400	1.6	2.4
1,300	1.7	2.3
1,200	1.8	2.2
1,100	1.9	2.1
1,000	2.0	2.0
900	2.1	1.9
800	2.2	1.8
700	2.3	1.7
600	2.4	1.6

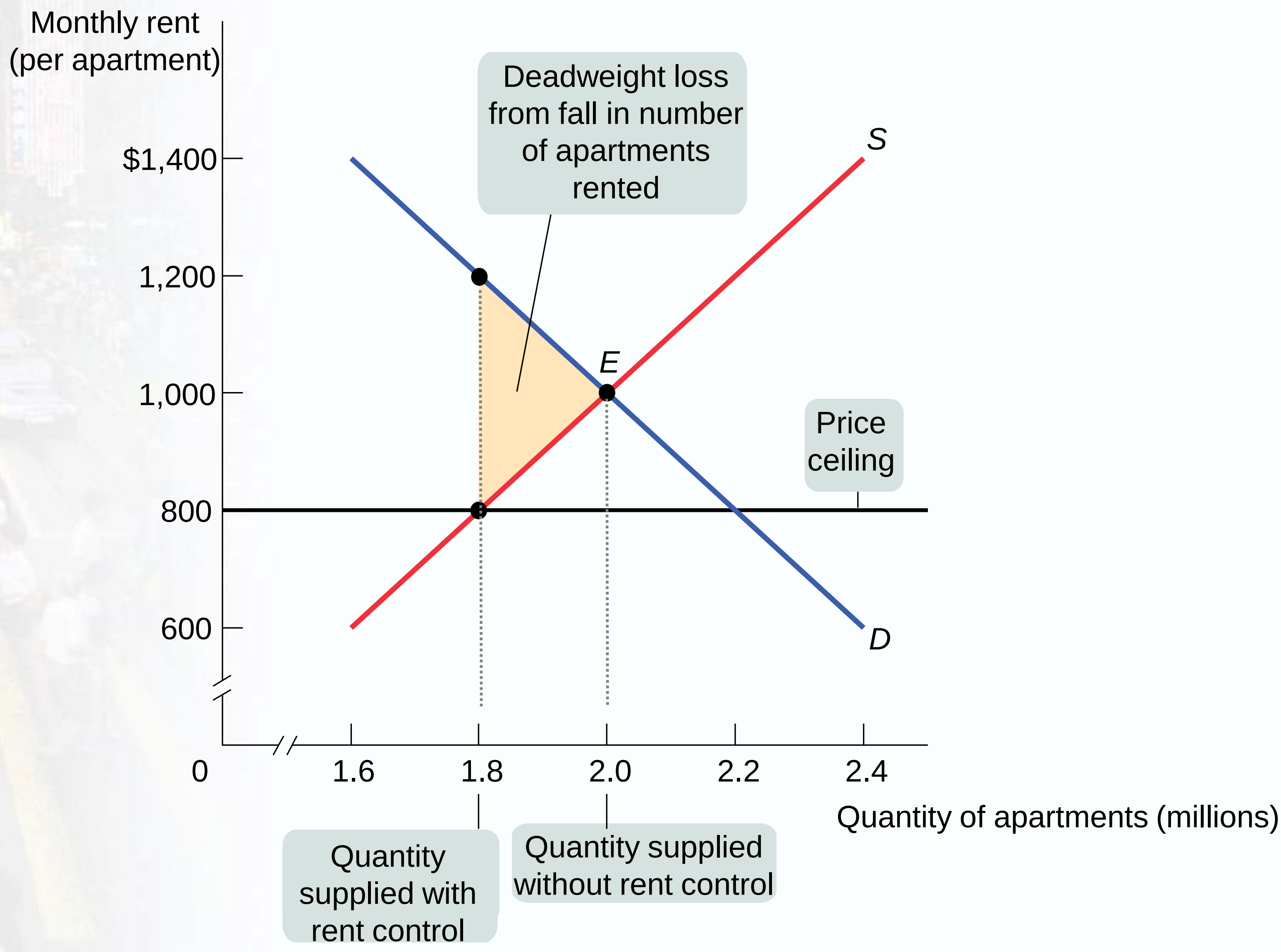
The Effects of a Price Ceiling



How Price Ceilings Cause Inefficiency

- Inefficiently low quantity
  - **Deadweight loss** is the loss in total surplus that occurs whenever an action or a policy reduces the quantity transacted below the efficient market equilibrium quantity
- Inefficient allocation to customers
- Wasted resources
- Inefficiently low quality
- Black markets

A Price Ceiling Causes Inefficiently Low Quantity

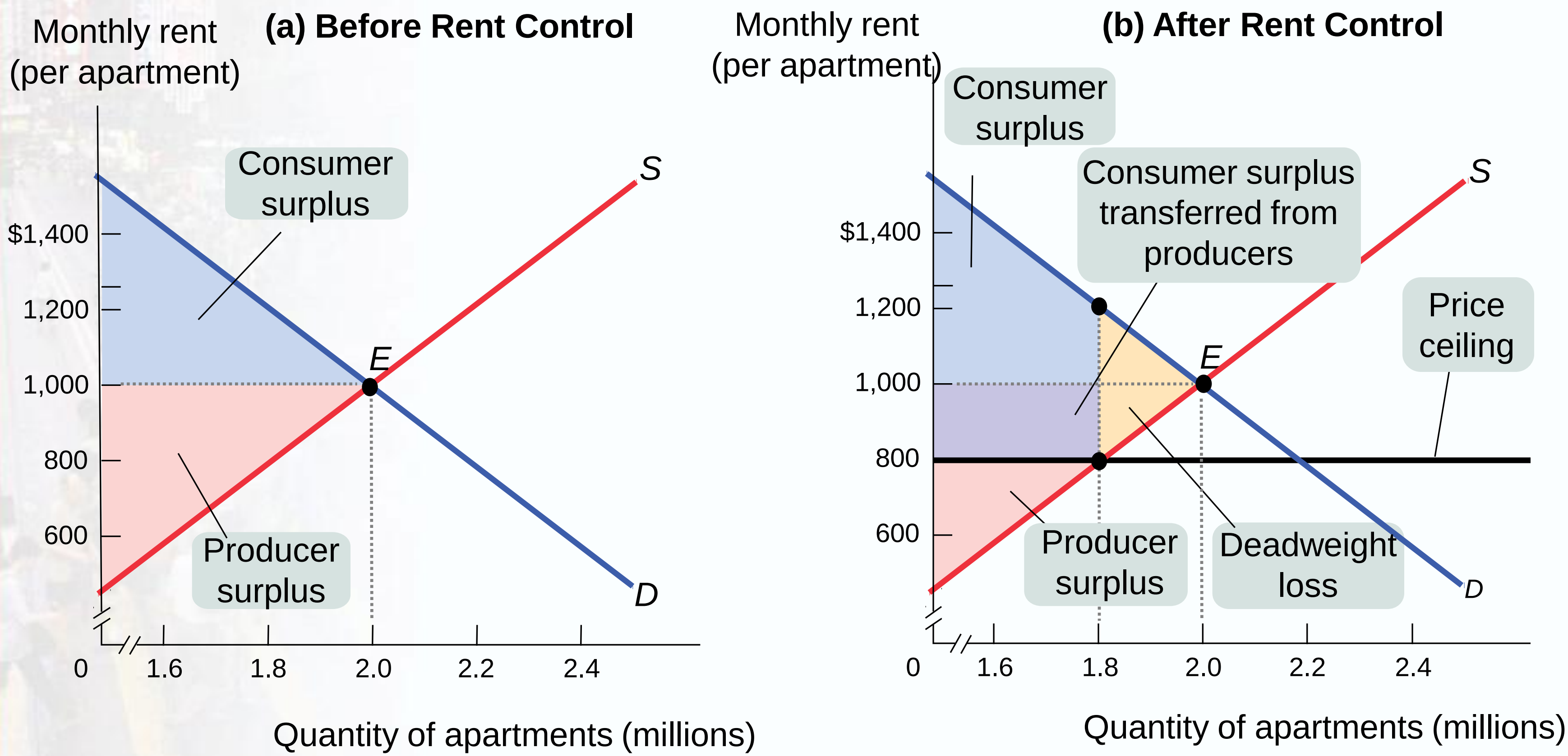


FOR INQUIRING MINDS

Winners, Losers, and Rent Control

- Price controls create winners and losers:
  - In 2005, Cyndi Lauper paid $989 a month for an apartment that would have been worth $3,750 if unregulated.
  - Mia Farrow's apartment, when lost its rent-control status, rose from the bargain rate of $2,900 per month to $8,000 per month.
- The losers are the working class renters the system was intended to help.
- We can use the concepts of consumer and producer surplus to graphically evaluate the winners and the losers from rent control.

Winners and Losers from Rent Control



How Price Ceilings Cause Inefficiency

- Price ceilings often lead to inefficiency in the form of **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.

- Price ceilings typically lead to inefficiency in the form of **wasted resources**: people expend money, effort, and time to cope with the shortages caused by the price ceiling.

How Price Ceilings Cause Inefficiency

- Price ceilings often lead to inefficiency in that the goods being offered are of **inefficiently low quality**: sellers offer low-quality goods at a low price even though buyers would prefer a higher quality at a higher price.

- A **black 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.

FOR INQUIRING MINDS

Rent Control, Mumbai Style

- How far would you go to keep a rent-controlled apartment?
- In May 2006, three people were killed when four floors in a rent-controlled apartment building in Mumbai collapsed.
- Despite demands by the city government to vacate the deteriorating building, 58 tenants refused to leave.
- Rent control began in Mumbai in 1947 to address a critical shortage that was caused by a flood of refugees fleeing the conflict between Hindus and Muslims. It was extended 20 times and now it applies to about 60% of the buildings in the city center.

FOR INQUIRING MINDS

Rent Control, Mumbai Style

Tenants pass apartments onto their heirs or sell the right to occupy to other tenants.

Landlords of rent-controlled buildings have suffered financially.

So Why Are There Price Ceilings?

Rent Control in New York

- Price ceilings hurt most residents but give a small minority of renters much cheaper housing than they would get in an unregulated market (those who benefit from the controls are typically better organized and more influential than those who are harmed by them).
- When price ceilings have been in effect for a long time, buyers may not have a realistic idea of what would happen without them.
- Government officials often do not understand supply and demand analysis!

ECONOMICS IN ACTION

Hunger and Price Controls in Venezuela

- Supermarket shopping in Caracas, Venezuela, is a bizarre experience. Shelves are fully stocked with scotch whiskey and imported cheese, but basic staples like black beans and beef are often absent because of price controls.
- Since 1998, the president pursued policies favoring the poor and working classes, such as price controls on basic foods (beans, chicken, sugar, etc.).

ECONOMICS IN ACTION

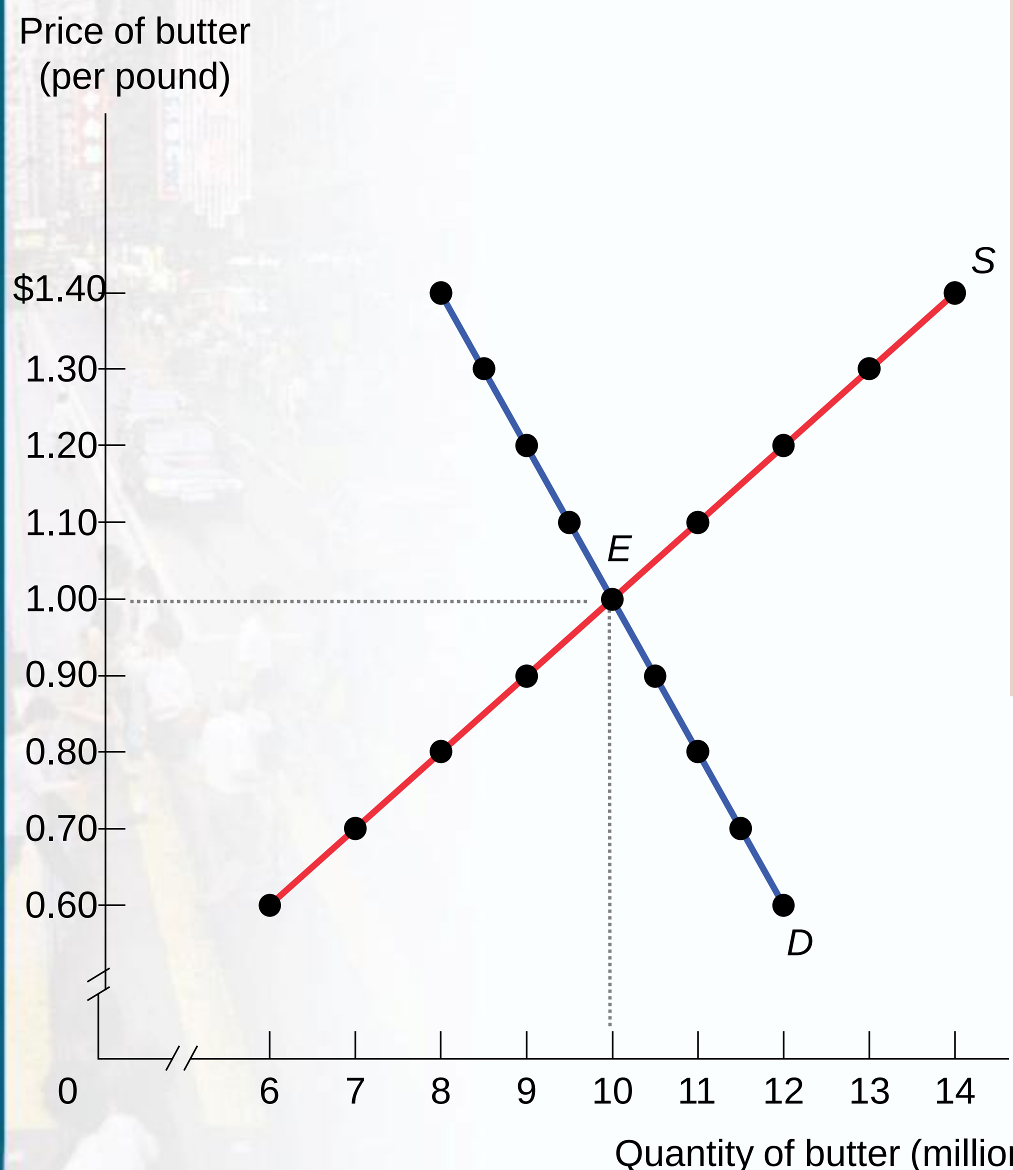
Hunger and Price Controls in Venezuela

- These policies in turn led to sporadic shortages, higher spending by consumers and sharply rising prices for goods whose prices were not controlled. There was an increase in demand for price-controlled goods.
- On the other hand, a sharp decline in the value of Venezuela’s currency led to a fall in imports of foreign foods. The result was empty shelves in the nation’s food stores.

Price Floors

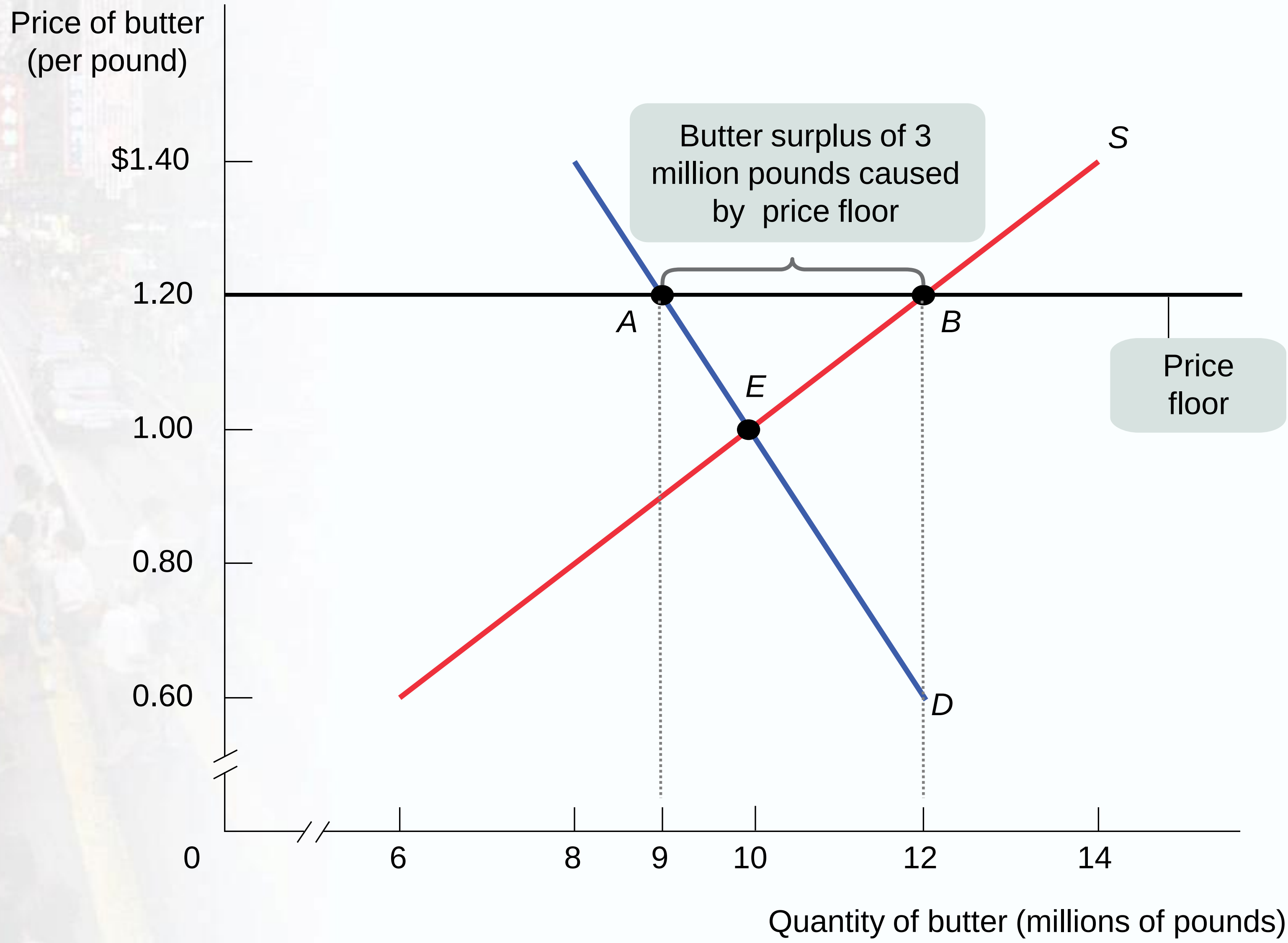
- Sometimes governments intervene to push market prices up instead of down.
- The **minimum wage** is a legal floor on the wage rate, which is the market price of labor.
- Just like price ceilings, price floors are intended to help some people but generate predictable and undesirable side effects.

The Market for Butter in the Absence of Government Controls



Price of butter (per pound)	Quantity of butter (millions of pounds)	
	Quantity demanded	Quantity supplied
$1.40	8.0	14.0
1.30	8.5	13.0
1.20	9.0	12.0
1.10	9.5	11.0
1.00	10.0	10.0
0.90	10.5	9.0
0.80	11.0	8.0
0.70	11.5	7.0
0.60	12.0	6.0

The Effects of a Price Floor



FOR INQUIRING MINDS

Price Floors and School Lunches

- When you were in grade school, did your school offer free or very cheap lunches? If so, you were probably a beneficiary of price floors.
- During the 1930s, when the U.S. economy was going through the Great Depression, prices were low and farmers were suffering.
  - To aid the farmers, the U.S. government imposed price floors on agricultural products like beef, sugar, pork, etc.

FOR INQUIRING MINDS

Price Floors and School Lunches

- Price floors are meant to create a surplus. Government reduces supply by paying farmers not to grow crops and also buys the surplus, thus taking excess surplus off the market.
- The government then gives away this excess surplus to schools as free or cheap lunches.

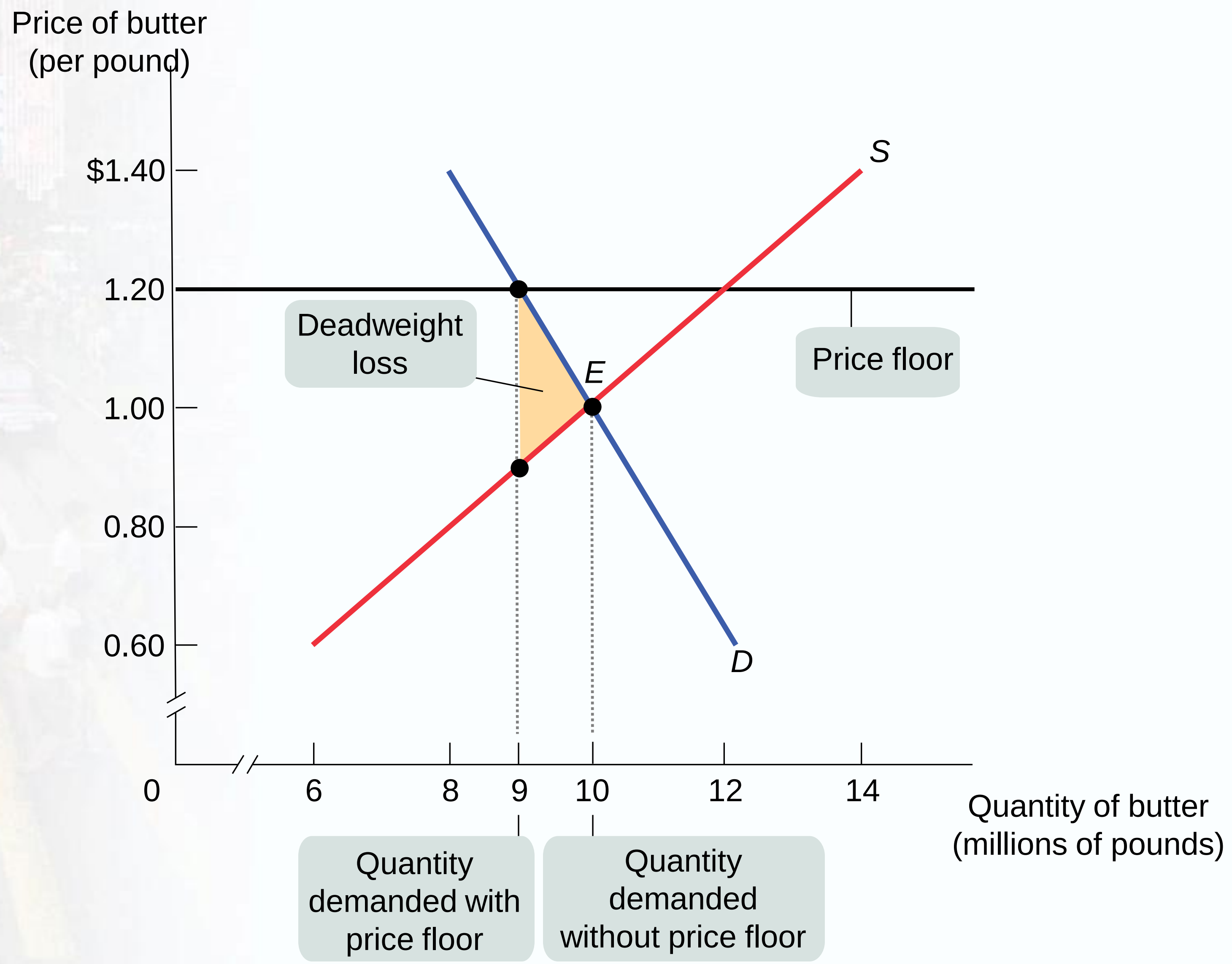
How a Price Floor Causes Inefficiency

The persistent surplus that results from a price floor creates missed opportunities—inefficiencies—that resemble those created by the shortage that results from a price ceiling.

These include:

- Deadweight loss from inefficiently low quantity
- Inefficient allocation of sales among sellers
- Wasted resources
- Inefficiently high quality
- Temptation to break the law by selling below the legal price

A Price Floor Causes Inefficiently Low Quantity



How a Price Floor Causes Inefficiency

- Price floors lead to **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.

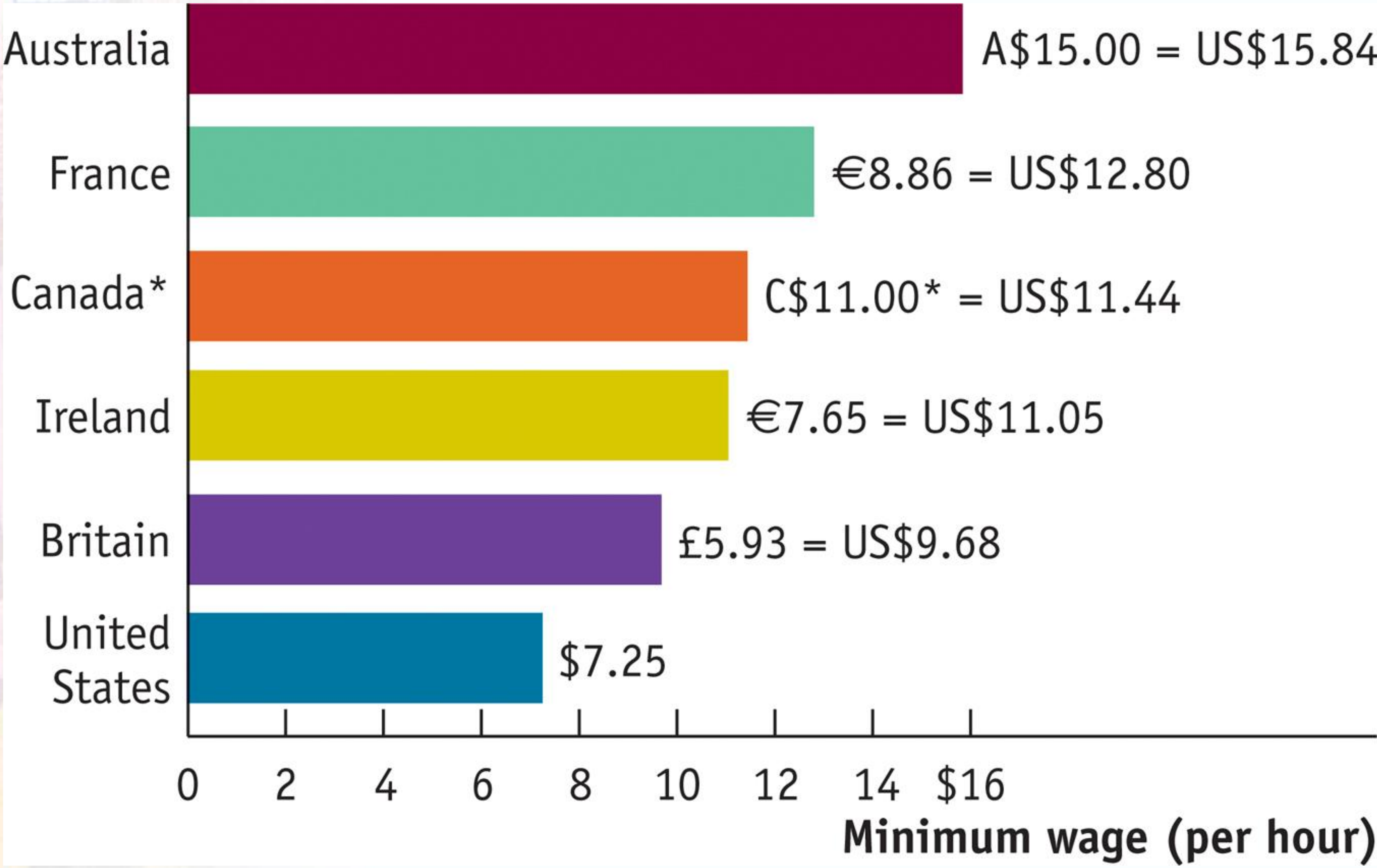
- Price floors often lead to inefficiency in that goods of **inefficiently high quality** are offered: sellers offer high-quality goods at a high price, even though buyers would prefer a lower quality at a lower price.

PITFALLS

Ceilings, Floors, and Quantities

- A price ceiling pushes the price of a good down.
- A price floor pushes the price of a good up.
- Both floors and ceilings reduce the quantity bought and sold.
- If sellers don’t want to sell as much as buyers want to buy, it’s the sellers who determine the actual quantity sold, because buyers can’t force unwilling sellers to sell.
- If buyers don’t want to buy as much as sellers want to sell, it’s the buyers who determine the actual quantity sold, because sellers can’t force unwilling buyers to buy.

GLOBAL COMPARISON: Low Wages (2011)



ECONOMICS IN ACTION

“Black Labor” in Southern Europe

- Minimum wages in many European countries have been set much higher than in the United States.
- The persistent surplus that results from this price floor appears in the form of high unemployment.
- In countries where enforcement of labor law is lax, it results in widespread evasion of the law.

ECONOMICS IN ACTION

“Black Labor” in Southern Europe

- In Italy and Spain, workers are employed by companies that pay them less than the minimum wage and fail to provide health care and retirement benefits. Many jobs also go unreported.
- In fact, Spaniards waiting to collect checks from the unemployment office have been known to complain about the long lines that keep them from getting back to work.

Controlling Quantities

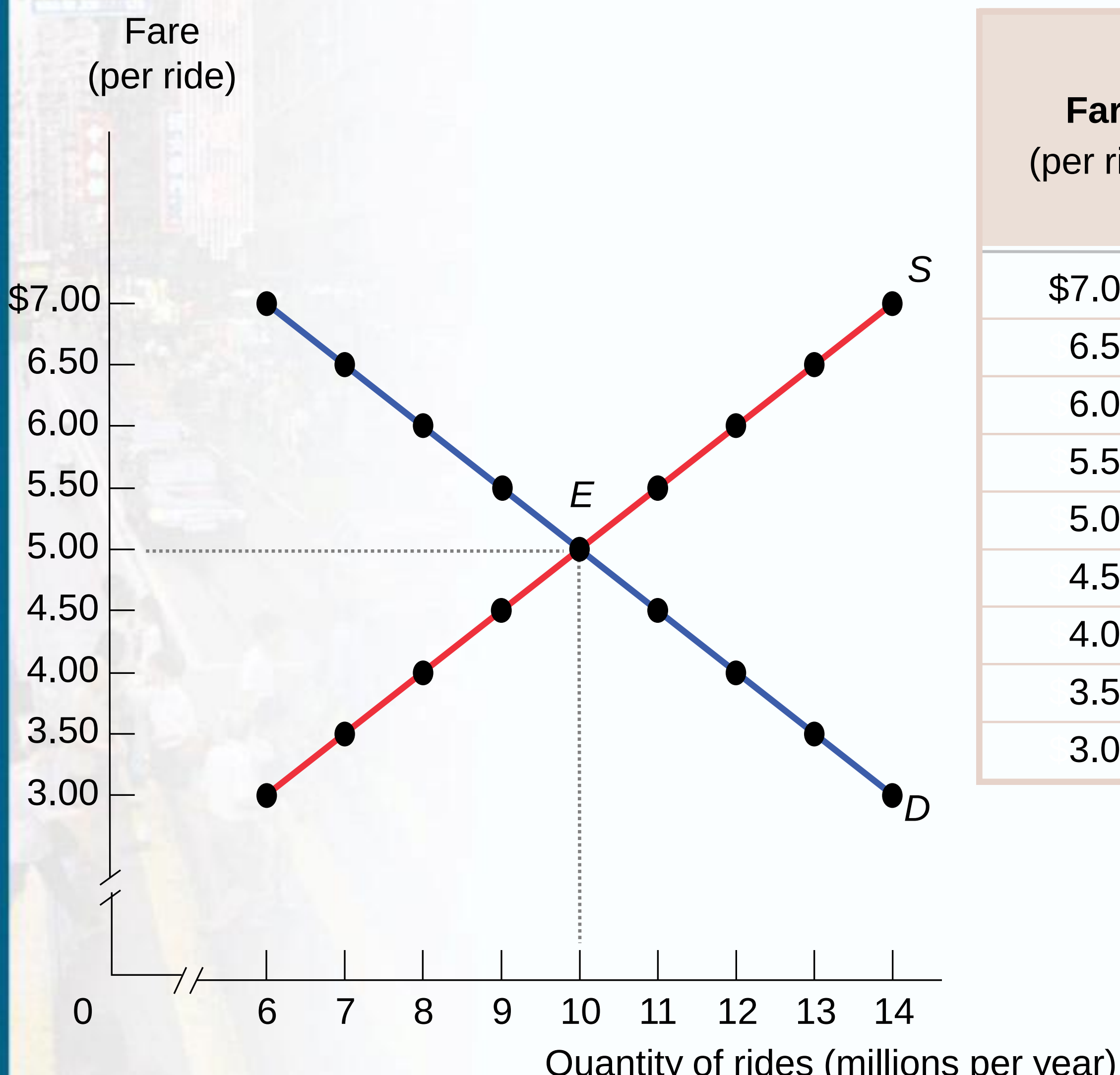
- A **quantity control**, or **quota**, is an upper limit on the quantity of some good that can be bought or sold. The total amount of the good that can be legally transacted is the **quota limit**. An example is the taxi medallion system in New York.

- A **license** gives its owner the right to supply a good.

- The **demand price** of a given quantity is the price at which consumers will demand that quantity.

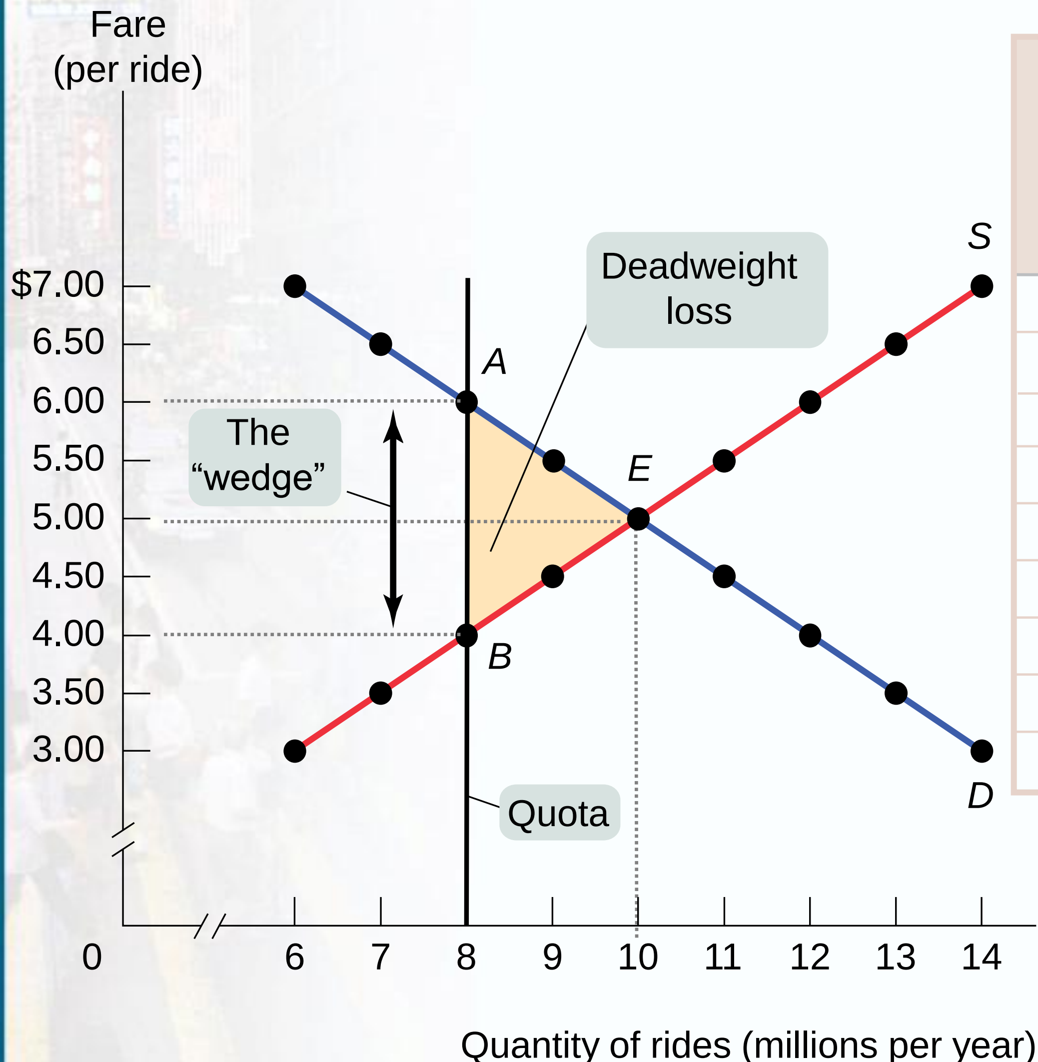
- The **supply price** of a given quantity is the price at which producers will supply that quantity.

The Market for Taxi Rides in the Absence of Government Controls



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

Effect of a Quota on the Market for Taxi Rides



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4.50	11	9
4.00	12	8
3.50	13	7
3.00	14	6

The Anatomy of Quantity Controls

- A quantity control, or quota, drives a **wedge** between the demand price and the supply price of a good; that is, the price paid by buyers ends up being higher than that received by sellers.

- The difference between the demand and supply price at the quota limit 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 Costs of Quantity Controls

- There is deadweight loss because some mutually beneficial transactions don't occur.
- There are incentives for illegal activities.

ECONOMICS IN ACTION

The Clams of New Jersey

- In the 1980s, excessive fishing threatened to wipe out New Jersey’s clam beds.
- To save the resource, the U.S. government introduced a clam quota, which set an overall limit on the number of bushels of clams to be caught and allocated licenses to owners of fishing boats based on their history of catches.

SUMMARY

SUMMARY

1. Even when a market is efficient, governments often intervene to pursue greater fairness or to please a powerful interest group. Interventions can take the form of **price controls** or quantity controls, both of which generate predictable and undesirable side effects consisting of various forms of inefficiency and illegal activity.

SUMMARY

2. A **price ceiling**, a maximum market price below the equilibrium price, benefits successful buyers but creates persistent shortages.

   Because the price is maintained below the equilibrium price, the quantity demanded is increased and the quantity supplied is decreased relative to the equilibrium quantity.

   This leads to predictable problems: inefficiencies in the form of **deadweight loss** from inefficiently low quantity, **inefficient allocation to consumers, wasted resources,** and **inefficiently low quality**. It also encourages illegal activity as people turn to **black markets** to get the good.

SUMMARY

3. A **price floor**, a minimum market price above the equilibrium price, benefits successful sellers but creates persistent surplus.

   Price floors lead to inefficiencies in the form of deadweight loss from inefficiently low quantity, inefficient allocation of sales among sellers, wasted resources, and inefficiently high quality. It also encourages illegal activity and black markets.

   The most well-known price floor is the **minimum wage**, but price floors are also commonly applied to agricultural products.

SUMMARY

4. **Quantity controls**, or **quotas**, limit the quantity of a good that can be bought or sold. The quantity allowed for sale is the **quota limit**.

   The government issues **licenses** to individuals, the right to sell a given quantity of the good.

   Economists say that a quota drives a **wedge** between the demand price and the supply price; this wedge is equal to the quota rent.

   Quantity controls lead to deadweight loss in addition to encouraging illegal activity.

SUMMARY

KEY TERMS

KEY TERM

- Price controls
- Price ceiling
- Price floor
- Deadweight loss
- Inefficient allocation to consumers
- Wasted resources
- Inefficiently low quality
- Black markets
- Minimum wage
- Inefficient allocation of sales among sellers
- Inefficiently high quality
- Quantity control
- Quota
- Quota limit
- License
- Demand price
- Supply price
- Wedge
- Quota rent