



*ANNIE TIAN*



# **Unit I: Basic Economic Concepts**

## **Equilibrium**

# How price are determined

Having analyze supply and demand separately, we now combine them to see how they determine the price and quantity of a good sold in a market.

# How price are determined

Direct bargaining  
直接议价



Seller/Trader

Buyer



Aim to keep the price high



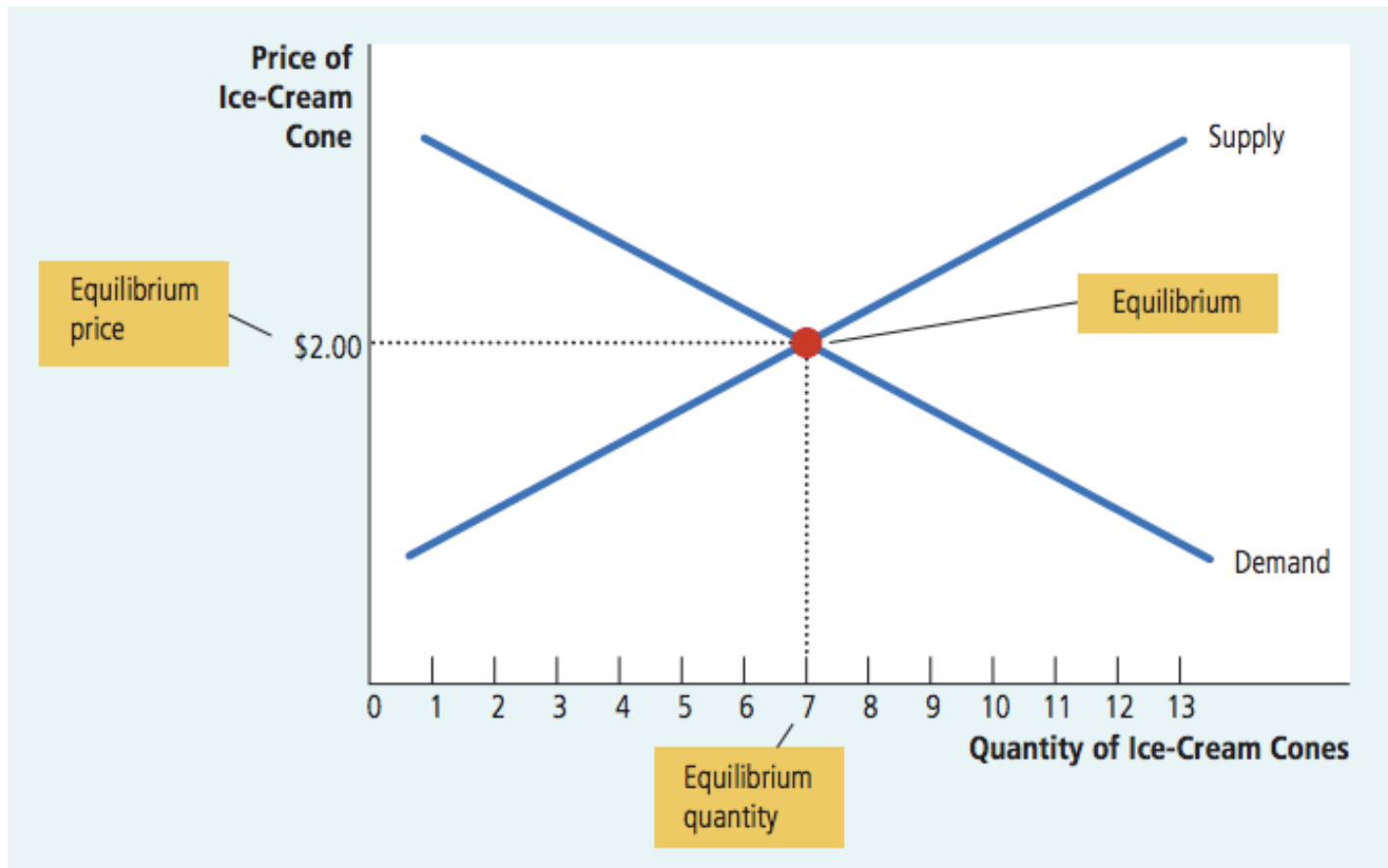
Aim to drive the price down

Indirect bargaining  
间接议价



Price

# Market Equilibrium 市场均衡



# Market Equilibrium

## 市场均衡

A situation where the market price has reached the level at which the **quantity demanded equals quantity supplied**.

An economic situation is in equilibrium when no individual would be better off doing something different.

# Equilibrium Price & Quantity

Price (\$)	Quantity demanded	Quantity supplied
50	2200	6000
45	2500	5000
40	3000	4300
35	3800	3800
30	5000	3000
25	7000	3500

Table 9.1: The daily demand for and supply of train tickets from Station X to Station Y

Buyers have bought all they want to buy, and  
sellers have sold all they want to sell

# Equilibrium Price 均衡价格

Equilibrium price is sometimes referred to as the market clearing price(市场出清价). This is because it is the price where **demand and supply are equal**, so there is no shortages(短缺) or surpluses(过剩) of the product.



# Equilibrium Quantity

## 均衡数量

**Equilibrium quantity is the quantity supplied and the quantity demanded at the equilibrium price.**

# Market disequilibrium 非均衡市场

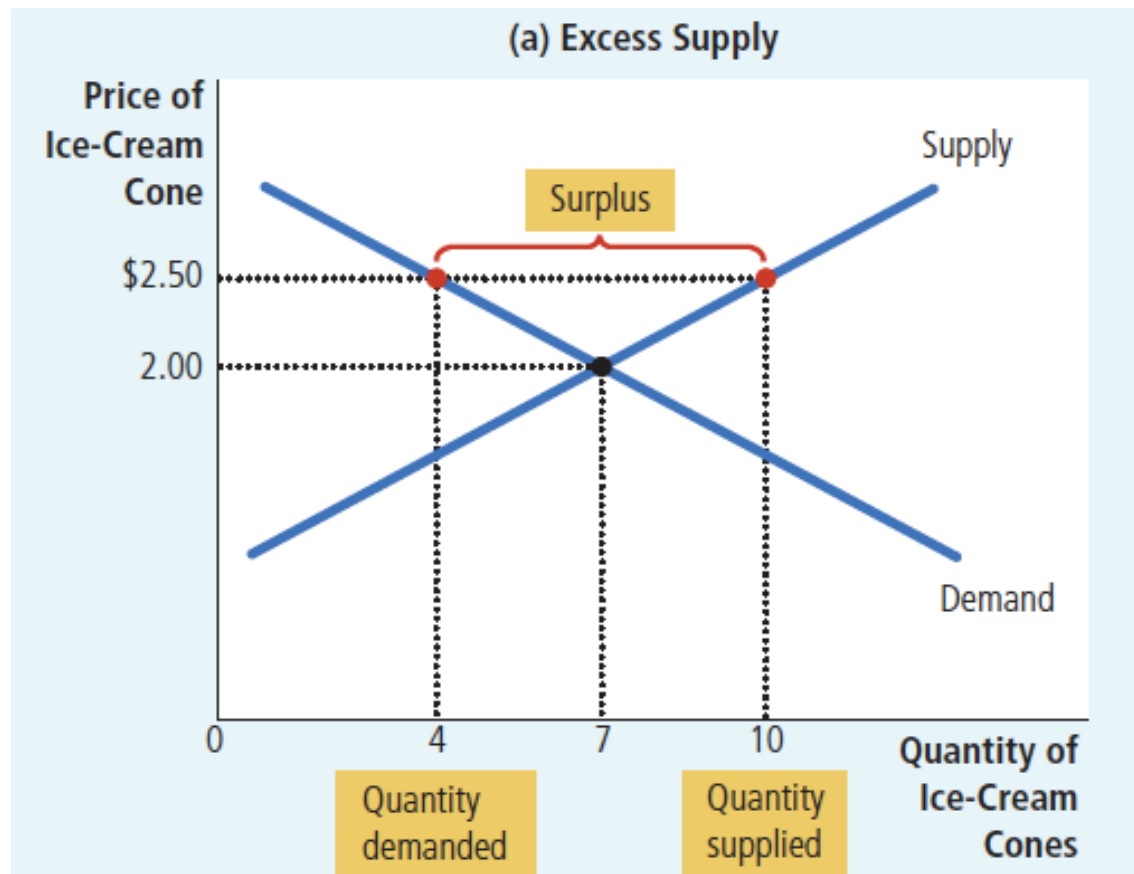
## Surplus (excess supply) 过剩(超额供给)

If a firm sets the price **above** the equilibrium level, it will not be able to sell all of the products it offers for sale.

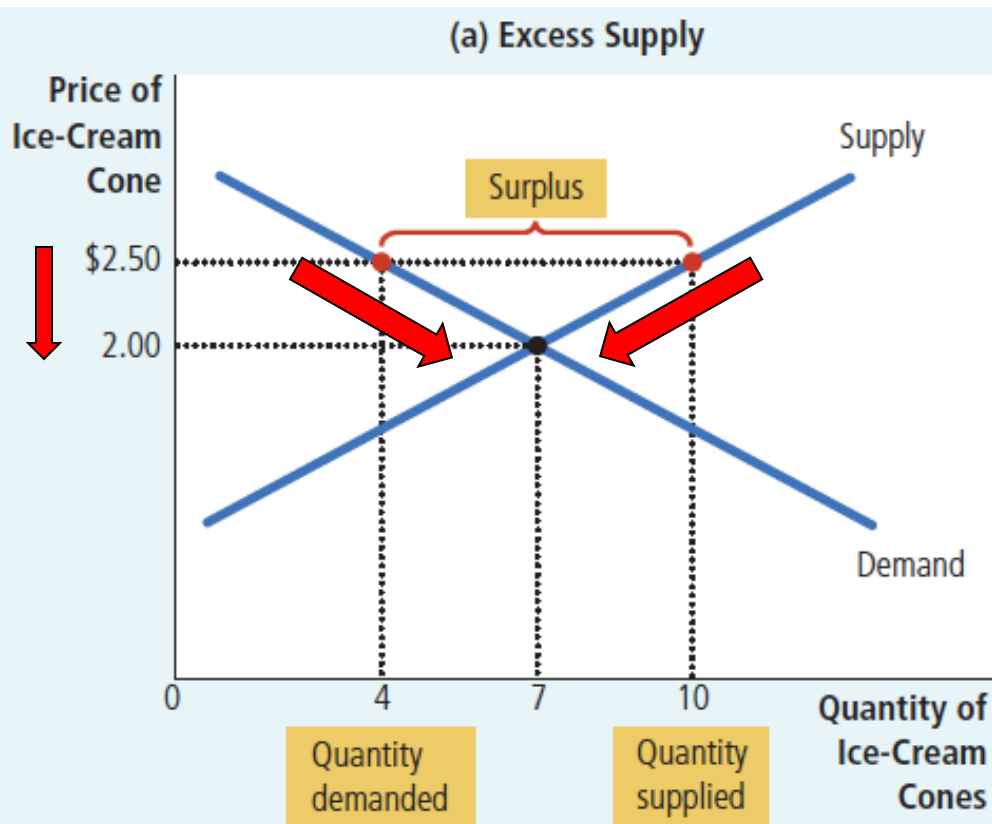
## Shortage (excess demand) 短缺(超额需求)

If a firm sets the price **below** the equilibrium level, there will initially be a shortage of the product with demand exceeding supply .

# Surplus 过剩(超额供给)



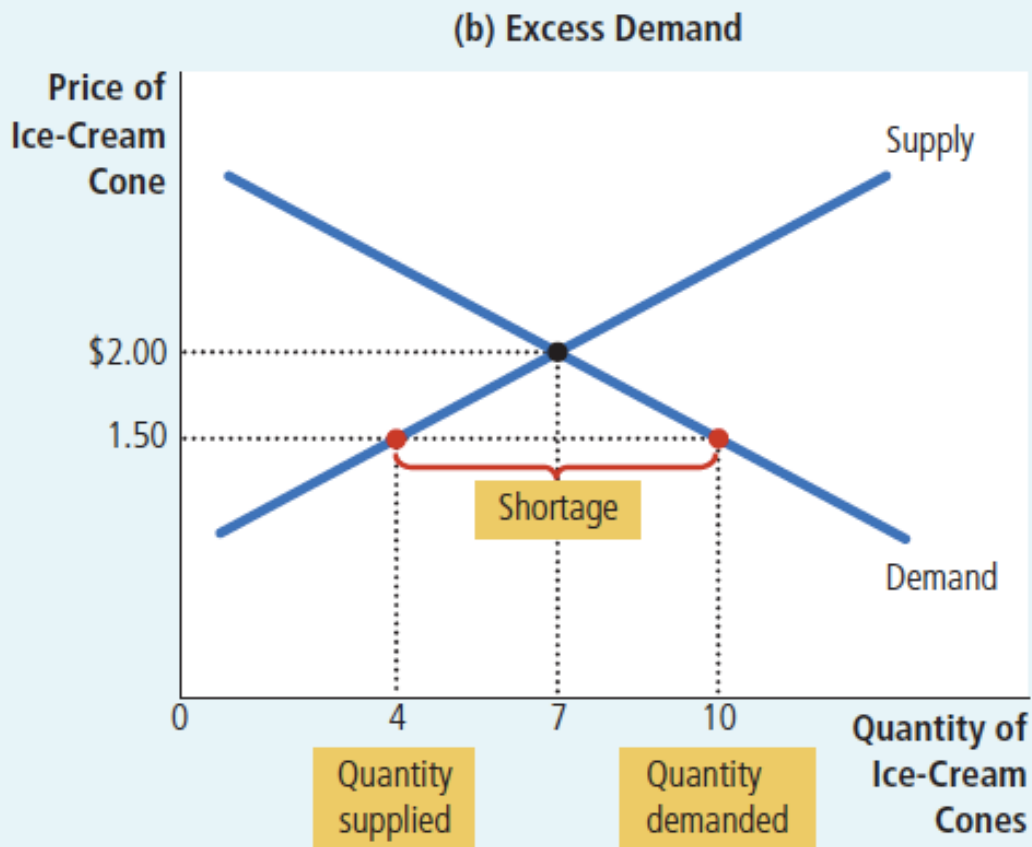
# Surplus 过剩



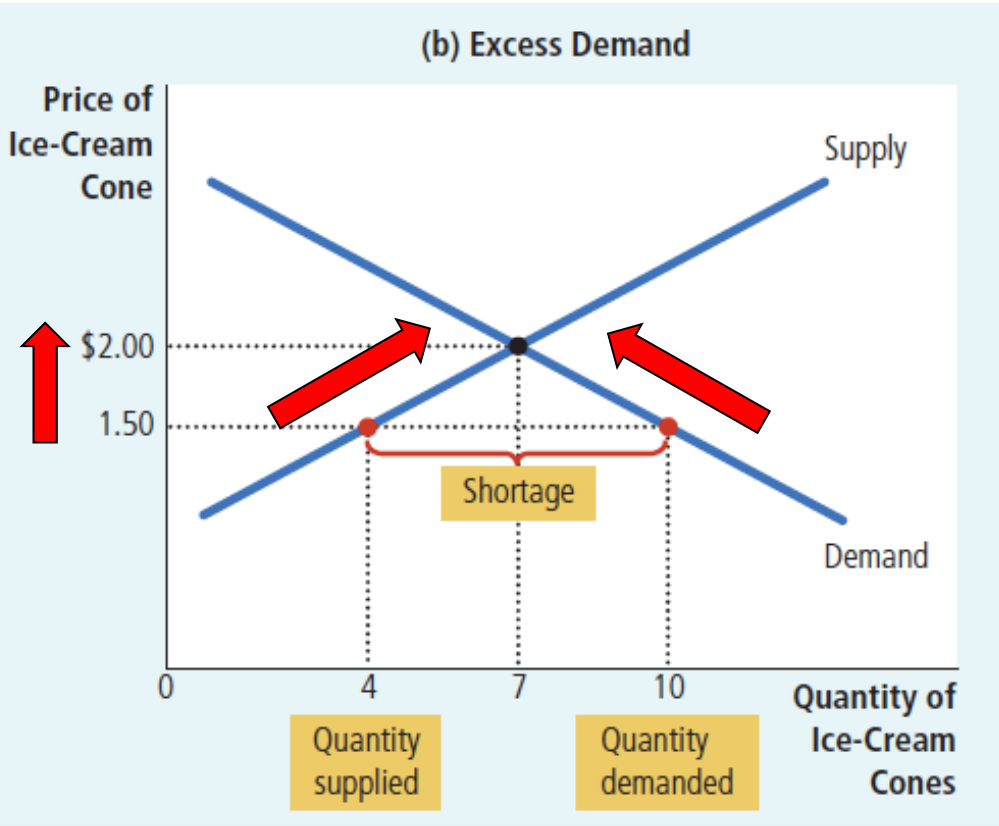
Result:

- Price will fall
- Causing demand to extend and supply to contract
- Finally, price reaches the equilibrium level

# shortage 短缺(超额需求)



# Shortage



Result:

- Price will rise
- Causing demand to contract and supply to extend
- Finally, price reaches the equilibrium level

# Law of supply and demand

## 供求定理

The claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance.



# **changes in equilibrium** **均衡变化**



# changes in equilibrium

- So far, we have seen how supply and demand together determine a market's equilibrium, which in turn determines the price and quantity of the good that buyers purchase and sellers produce.
- The equilibrium price and quantity depend on the position of the supply and demand curves.
- When some event **shifts one of these curves, the equilibrium in the market changes**, resulting in a new price and a new quantity exchanged between buyers and sellers.

## **3 steps to analyze the changes in equilibrium**

- 1) Decide whether the event shifts the supply or demand curve (or perhaps both).
- 2) Decide in which direction the curve shifts.
- 3) Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.

**Suppose that one summer the weather is very hot. How does this event affect the market for ice cream ?**

# The effect of changes in demand

Suppose that one summer the weather is very hot. How does this event affect the market for ice cream ?

# The effect of changes in demand

Suppose that one summer the weather is very hot. How does this event affect the market for ice cream ?

1. *Decide whether the event shifts the supply or demand curve (or perhaps both).*
  - The hot weather affects the demand curve by changing people's taste for ice cream.
  - That is, the weather changes the amount of ice cream that people want to buy at any given price.
  - The supply curve is unchanged because the weather does not directly affect the firms that sell ice cream.

# The effect of changes in demand

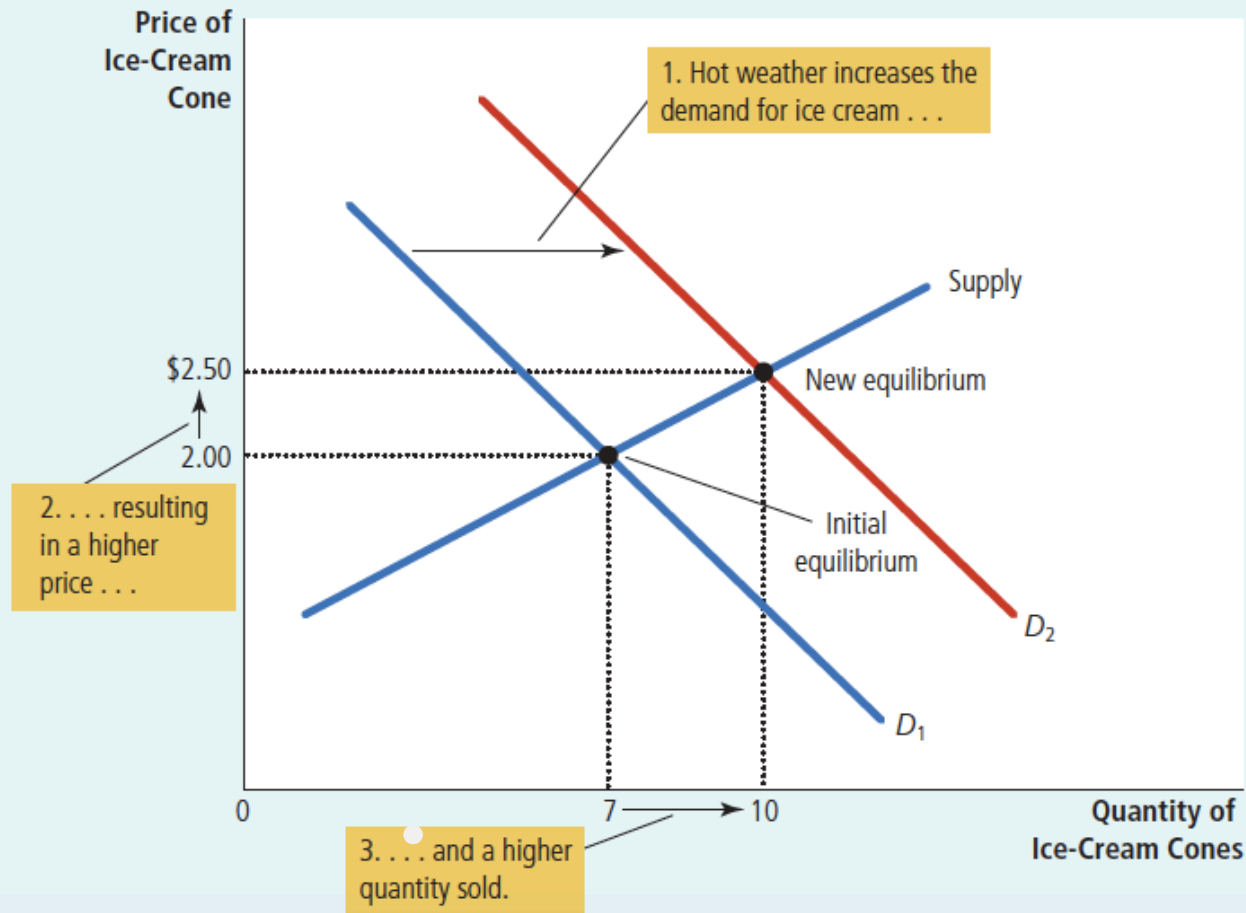
Suppose that one summer the weather is very hot. How does this event affect the market for ice cream ?

2. *Decide in which direction the curve shifts.*

Because hot weather makes people want to eat more ice cream, the demand curve shifts to the right. This shift indicates that the quantity of ice cream demanded is higher at every price.

# The effect of changes in demand

Suppose that one summer the weather is very hot. How does this event affect the market for ice cream ?



**Suppose that during another summer, a hurricane destroys part of the sugarcane crop and drives the sugar's price up.**



# The effect of changes in supply

Suppose that during another summer, a hurricane destroys part of the sugarcane crop and drives the sugar's price up.

# The effect of changes in supply

1. *Decide whether the event shifts the supply or demand curve (or perhaps both).*

- The change in the price of sugar, an input (投入) for making ice cream, affects the supply curve.
- By raising the costs of production, it reduces the amount of ice cream that firms produce and sell at any given price.
- The demand curve does not change because the higher cost of inputs does not directly affect the amount of ice cream consumers wish to buy.

**Suppose that during another summer, a hurricane destroys part of the sugarcane crop and drives the sugar's price up.**

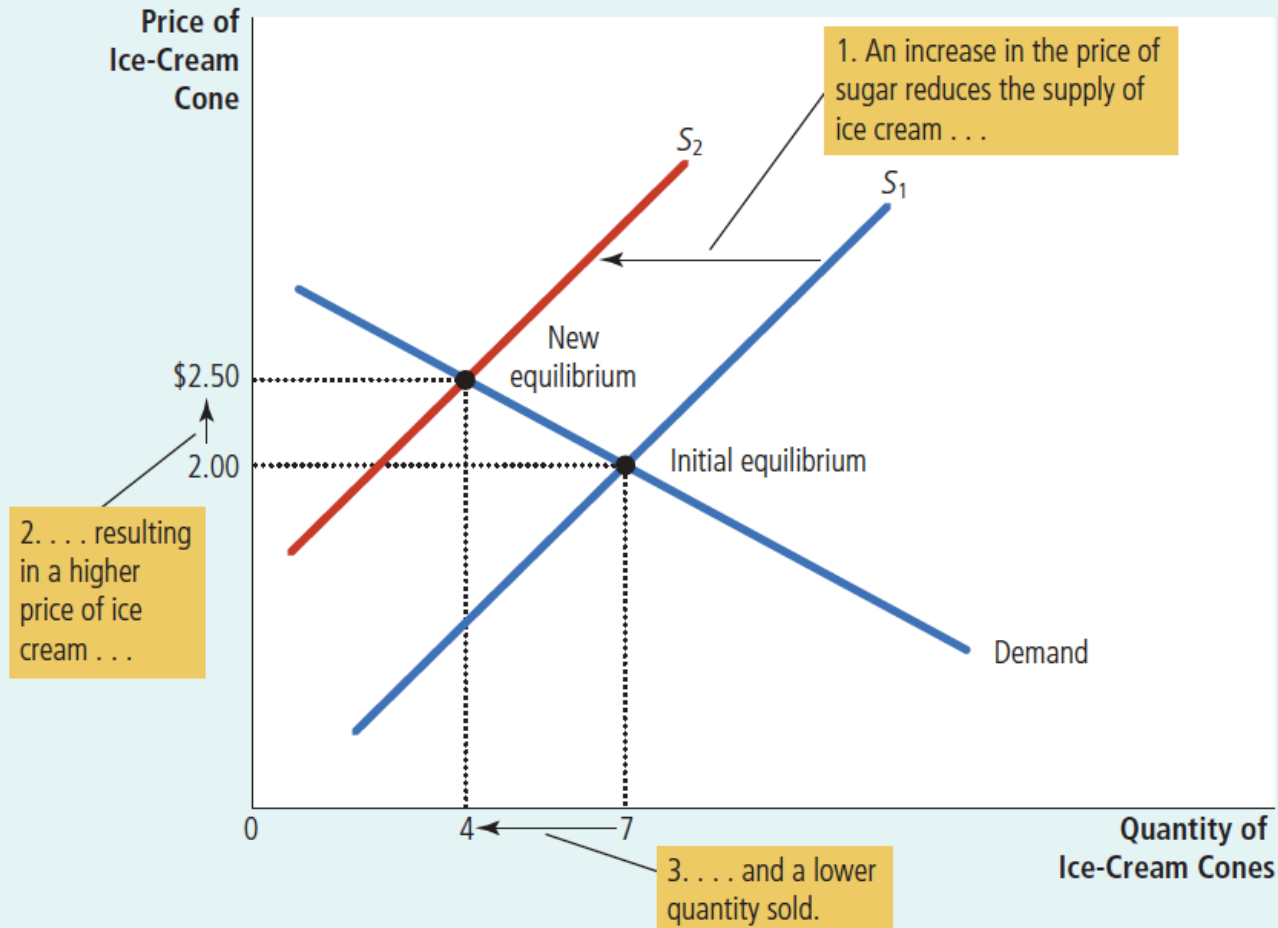
# The effect of changes in supply

*2. Decide in which direction the curve shifts.*

The supply curve shifts to the left because, at every price, the total amount that firms are willing and able to sell is reduced.

Suppose that during another summer, a hurricane destroys part of the sugarcane crop and drives the sugar's price up.

# The effect of changes in supply



Suppose that during another summer, a hurricane destroys part of the sugarcane crop and drives the sugar's price up.

**Suppose that the heat wave and the hurricane occur during the same summer .**

# The change in demand and supply

Suppose that the heat wave and the hurricane occur during the same summer .

# The change in demand and supply

Suppose that the heat wave and the hurricane occur during the same summer .

1. *Decide whether the event shifts the supply or demand curve (or perhaps both).*
  - We determine that both curves must shift.
  - The hot weather affects the demand curve because it alters the amount of ice cream that consumers want to buy at any given price.
  - At the same time, when the hurricane drives up sugar prices, it alters the supply curve for ice cream because it changes the amount of ice cream that firms want to sell at any given price.

# The change in demand and supply

Suppose that the heat wave and the hurricane occur during the same summer .

2. *Decide in which direction the curve shifts.*

- The curves shift in the same directions as they did in our previous analysis:
- The demand curve shifts to the right, and the supply curve shifts to the left.



# The change in demand and supply

Suppose that the heat wave and the hurricane occur during the same summer .

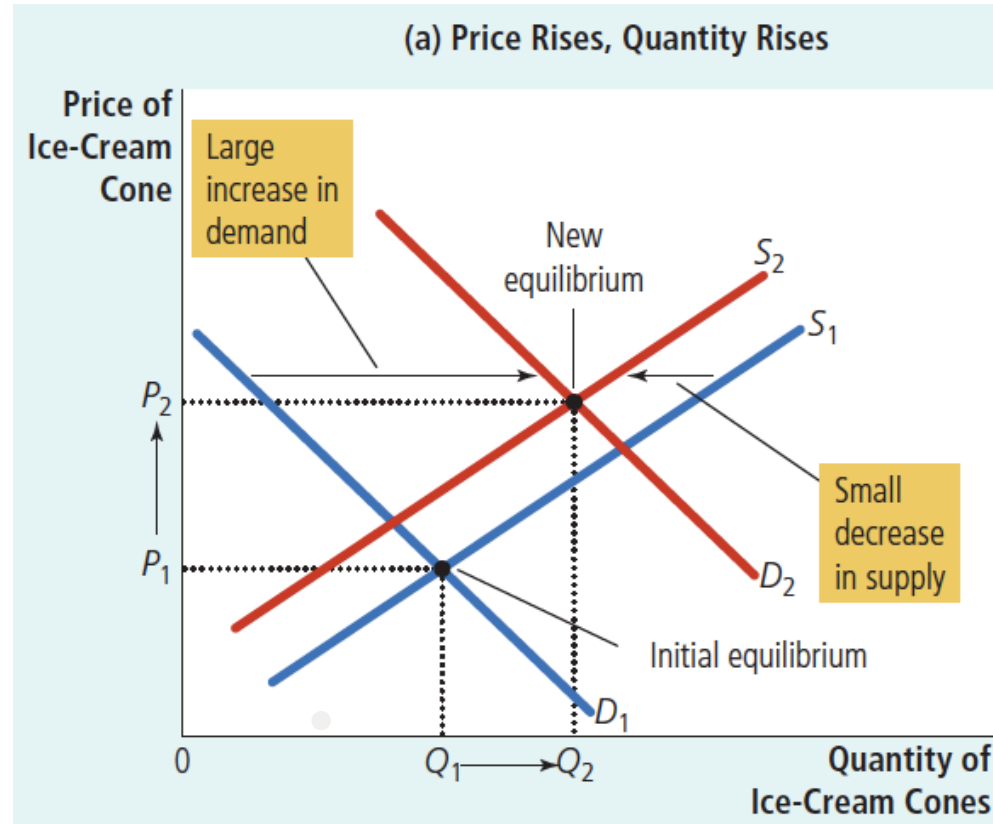
*3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity.*

Two possible outcomes might result depending on the relative size of the demand and supply shifts. In both cases, the equilibrium price **ris**es.

# The change in demand and supply

Demand increases substantially while supply falls just a little, the equilibrium quantity also rises.

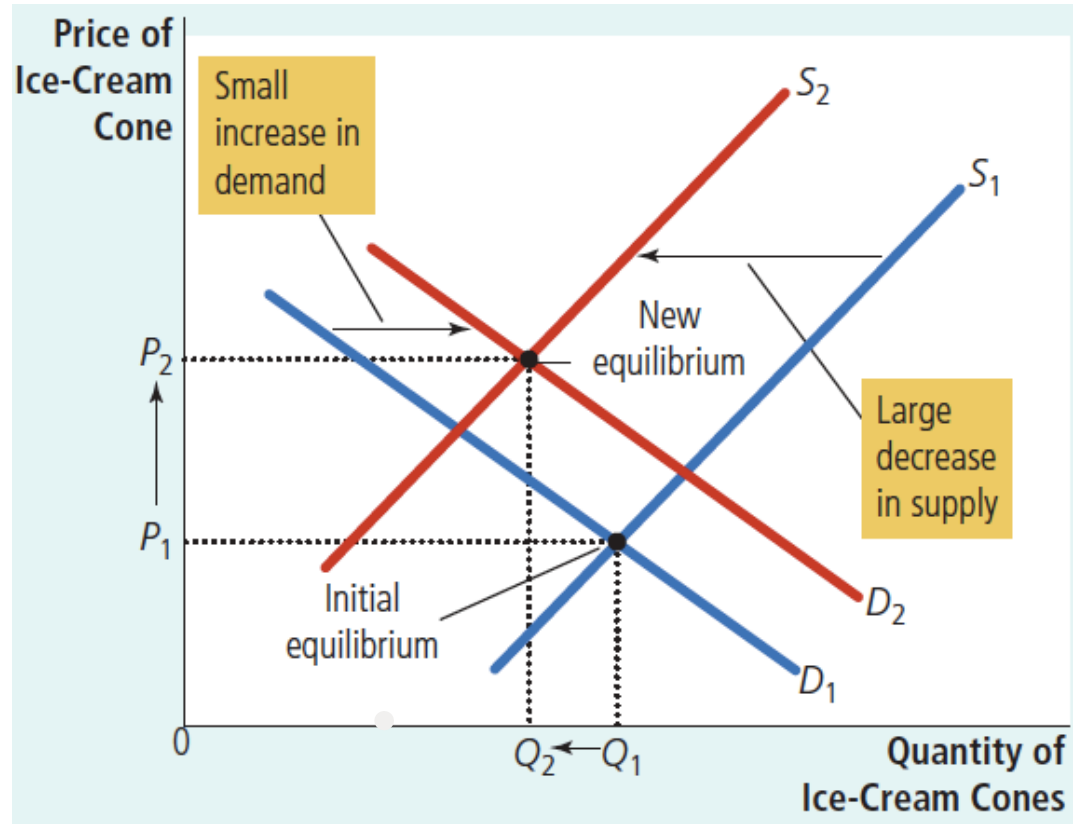
Suppose that the heat wave and the hurricane occur during the same summer .



# The change in demand and supply

Supply falls substantially while demand rises just a little, the equilibrium quantity falls.

Suppose that the heat wave and the hurricane occur during the same summer .



# Simultaneous Shifts of the Demand and Supply Curves

- summary

<b><i>Simultaneous Shifts of Supply and Demand</i></b>	<b>Supply Increases</b>	<b>Supply Decreases</b>
<b>Demand Increases</b>	<u>Price</u> : ambiguous <u>Quantity</u> : up	<u>Price</u> : up <u>Quantity</u> : ambiguous
<b>Demand Decreases</b>	<u>Price</u> : down <u>Quantity</u> : ambiguous	<u>Price</u> : ambiguous <u>Quantity</u> : down



# **price controls**

## 价格控制

# Price Ceilings(maximum price)

## 价格天花板

a price ceiling is a **maximum** price sellers are allowed to charge for a good or service

# Price Ceilings

## 价格天花板

- 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



# Price Ceilings

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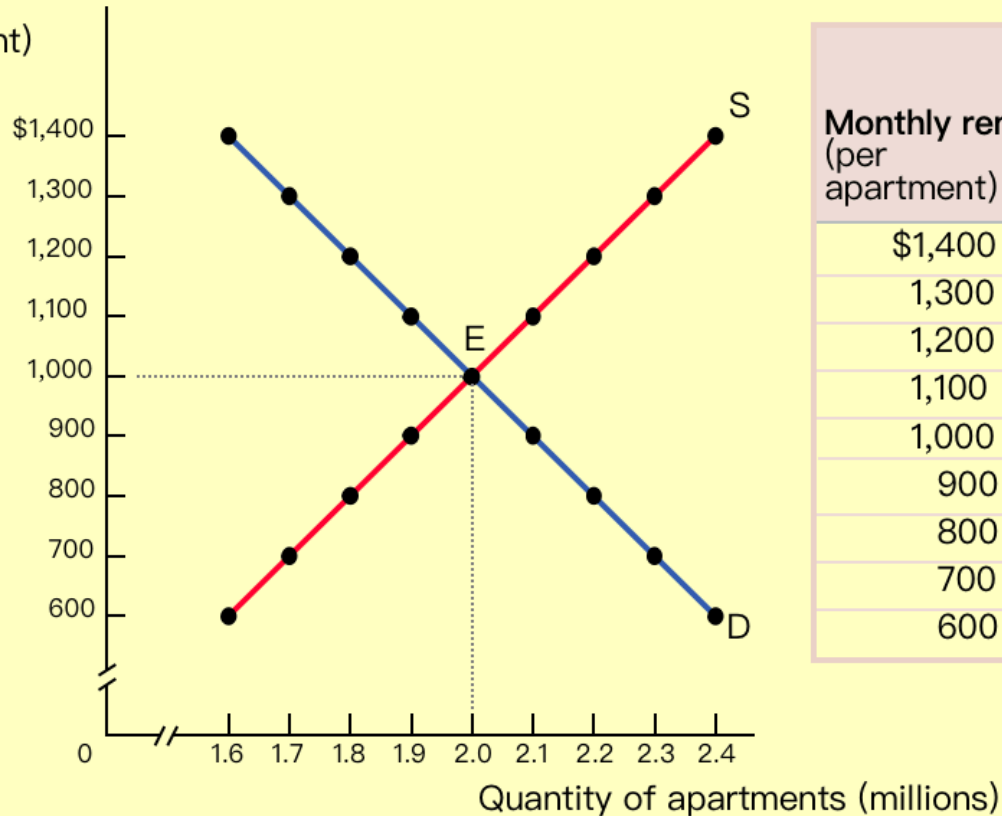
Rent control in New York





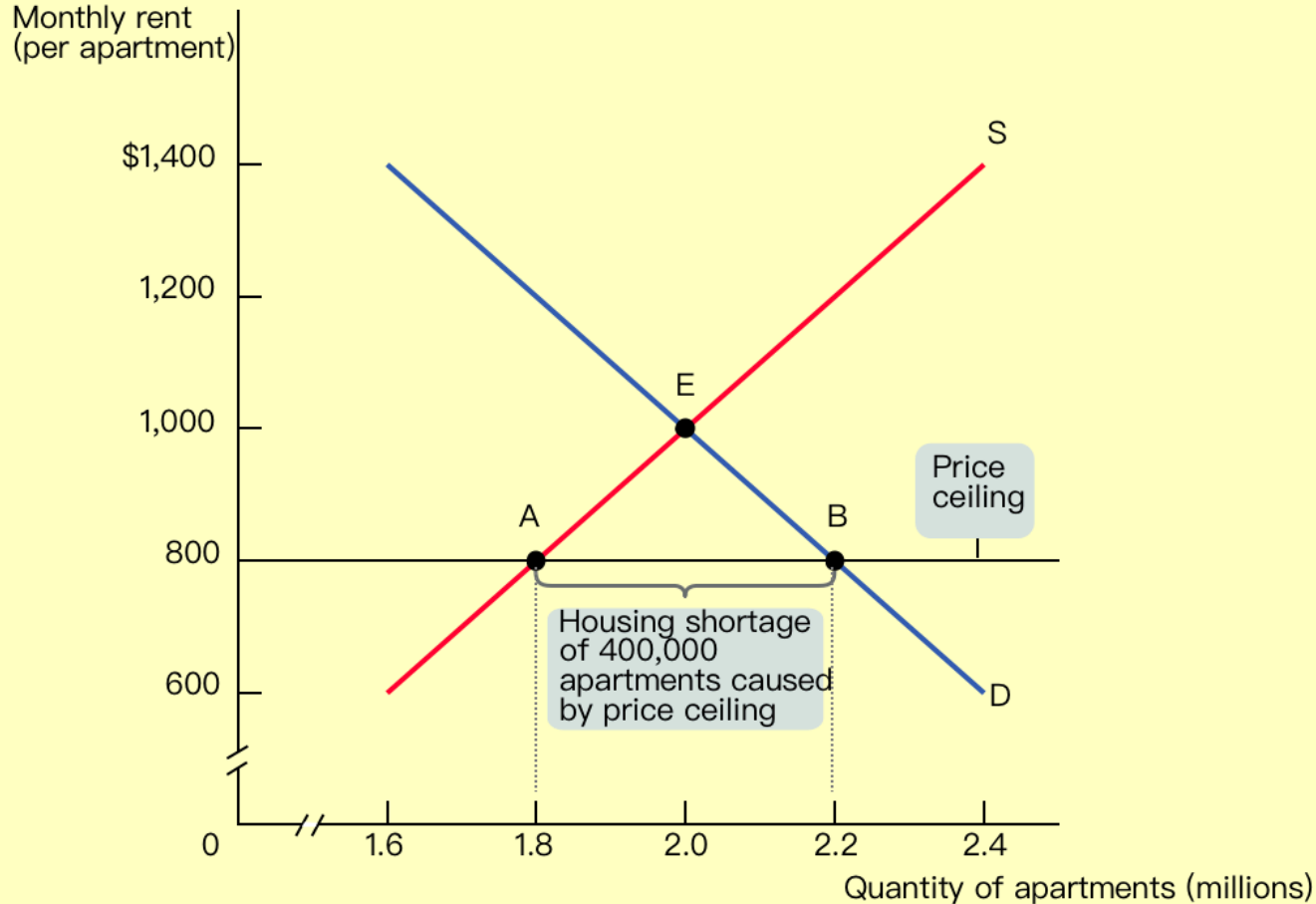
# [CASE STUDY] The Market for Apartments in the Absence of Government Controls

Monthly rent  
(per  
apartment)



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

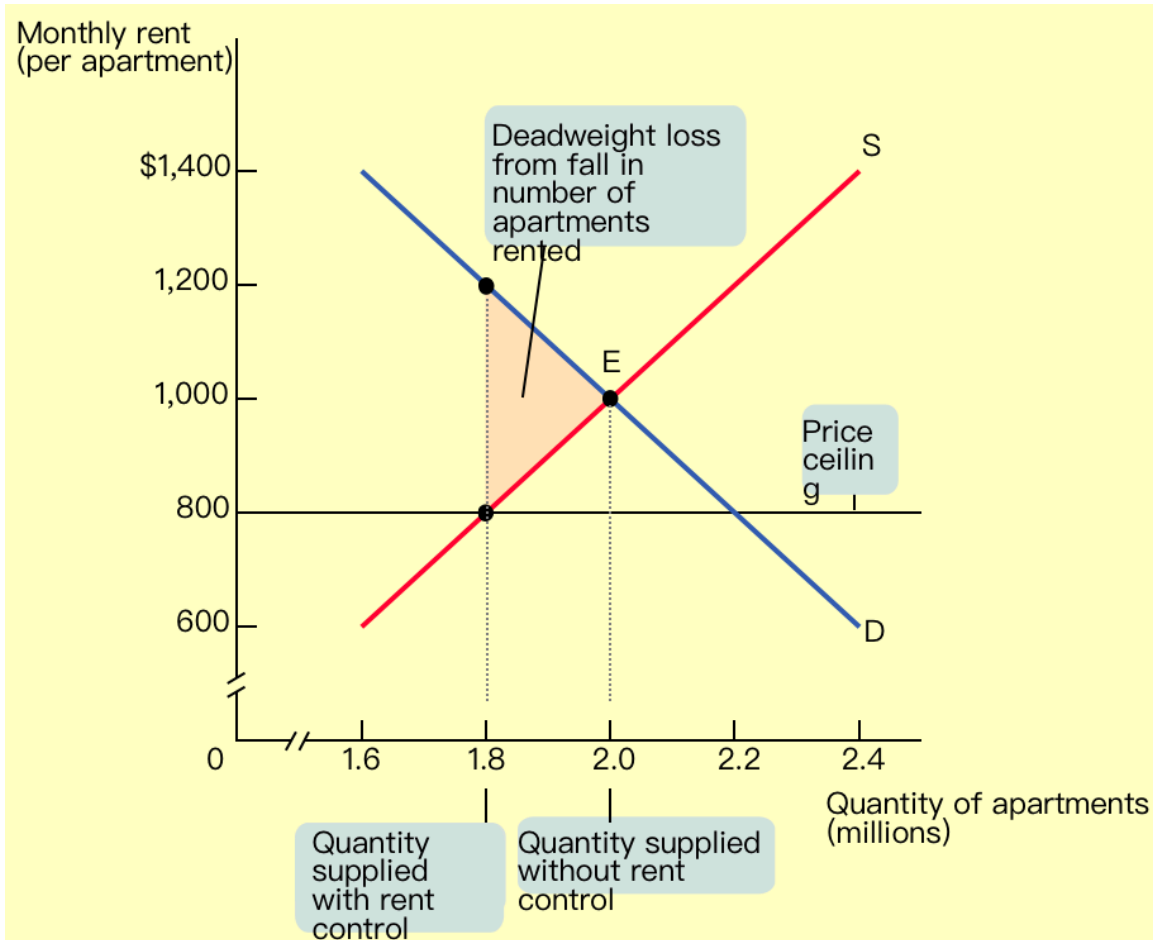
# [CASE STUDY] The Effects of a Price Ceiling



# 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



# 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.

# Price Floors

## 价格地板

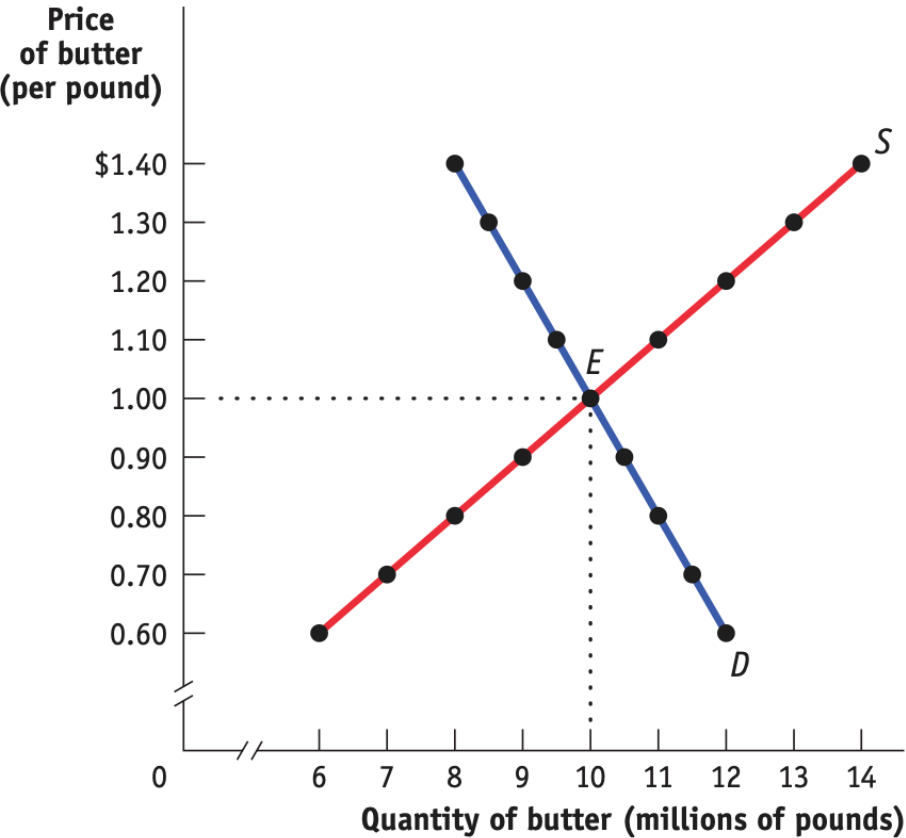
a price floor is a **minimum** price buyers are required to pay for a good or service

## Price Floors(minimum price)

- Sometimes governments intervene 干预 to push market prices up instead of down.
- The **minimum wage** 法定最低工资水平 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.

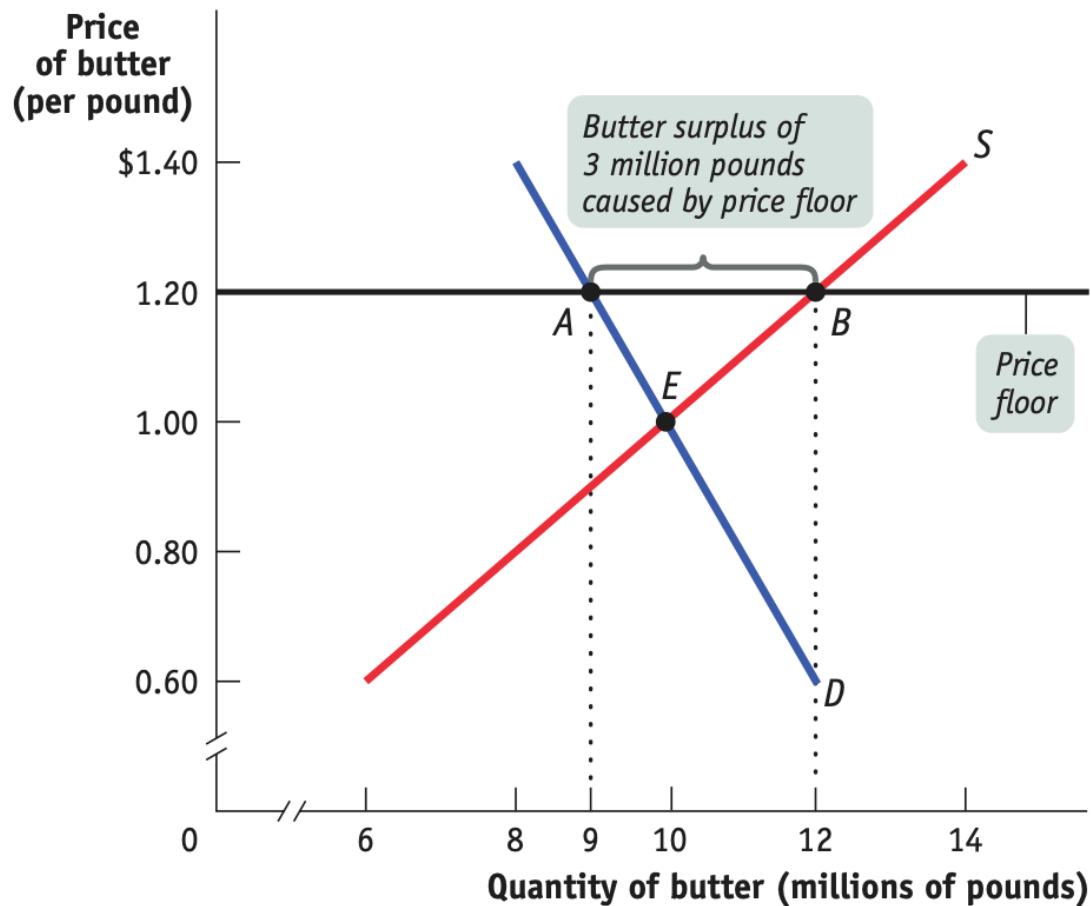


# The Market for Butter in the Absence of Government Controls



Monthly rent (per apartment)	Quantity of apartments (millions)	
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700	2.3	1.7
600	2.4	1.6

# The Effects of a Price Ceiling



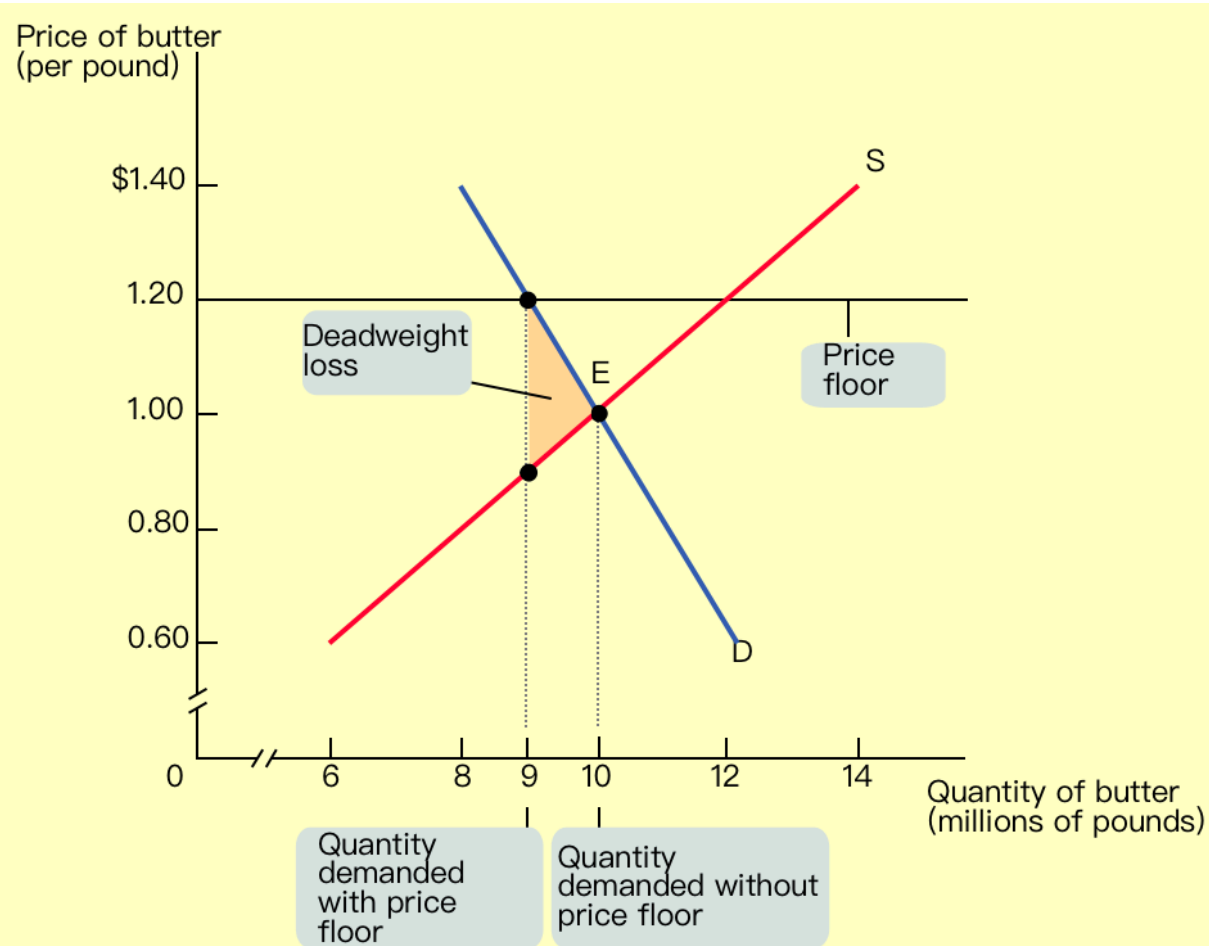
# The Effects of a Price Ceiling



## How a Price Floor Causes Inefficiency

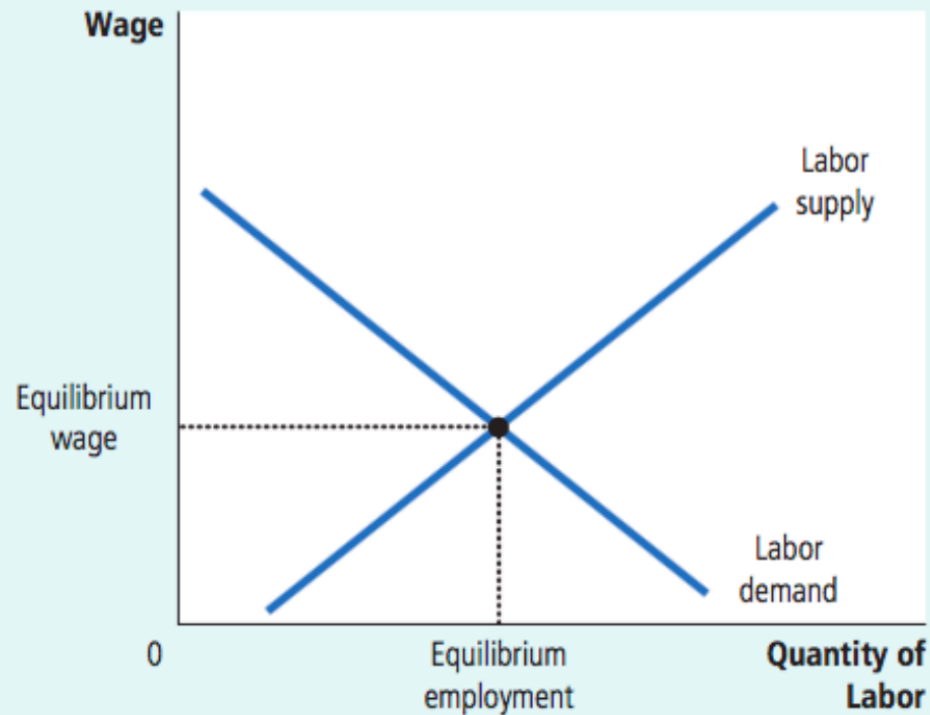
- The persistent持续的 surplus that results from a price floor creates missed opportunities—inefficiencies—that resemble those created by the shortage that results from a price ceiling. These include:
  - Deadweight loss from inefficiently low quantity
  - Inefficient allocation of sales among sellers
  - Wasted resources
  - Inefficiently high quality
  - Temptation to break the law by selling below the legal price

# A Price Floor Causes Inefficiently Low Quantity

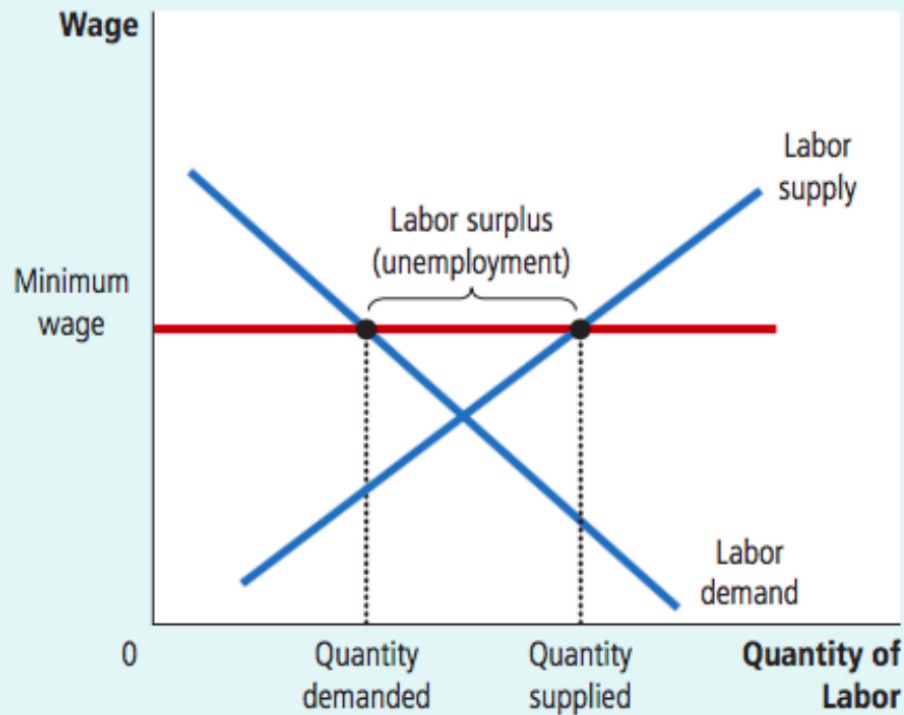


# A Price Floor Causes Wasted resources

(a) A Free Labor Market



(b) A Labor Market with a Binding Minimum Wage



# A Price Floor Causes illegal activity

## “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.
- 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!