



CHAPTER

3

Demand and Supply

After studying this chapter you will be able to

- ◆ Describe a competitive market and think about a price as an opportunity cost
- ◆ Explain the influences on demand
- ◆ Explain the influences on supply
- ◆ Explain how demand and supply determine prices and quantities bought and sold
- ◆ Use the demand and supply model to make predictions about changes in prices and quantities

Market and Prices

A *market* is any arrangement that enables buyers and sellers to get information and do business with each other.

A **competitive market** is a market that has many buyers and many sellers so no single buyer or seller can influence the price.

The **money price** of a good is the amount of money needed to buy it.

The **relative price** of a good—the ratio of its money price to the money price of the next best alternative good—is its *opportunity cost*.

Demand

If you **demand** something, then you

1. Want it,
2. Can afford it, and
3. Have made a definite plan to buy it.

The **quantity demanded** of a good or service is the amount that consumers plan to buy during a particular time period, and at a particular price.

Demand

The Law of Demand

The **law of demand** states:

Other things remaining the same, the higher the price of a good, the smaller is the quantity demanded; and the lower the price of a good, the larger is the quantity demanded.

The law of demand results from

- Substitution effect
- Income effect

Demand

Substitution Effect

When the relative price (opportunity cost) of a good or service rises, people seek substitutes for it, so the quantity demanded of the good or service decreases.

Income Effect

When the price of a good or service rises relative to income, people cannot afford all the things they previously bought, so the quantity demanded of the good or service decreases.

Demand

Demand Curve and Demand Schedule

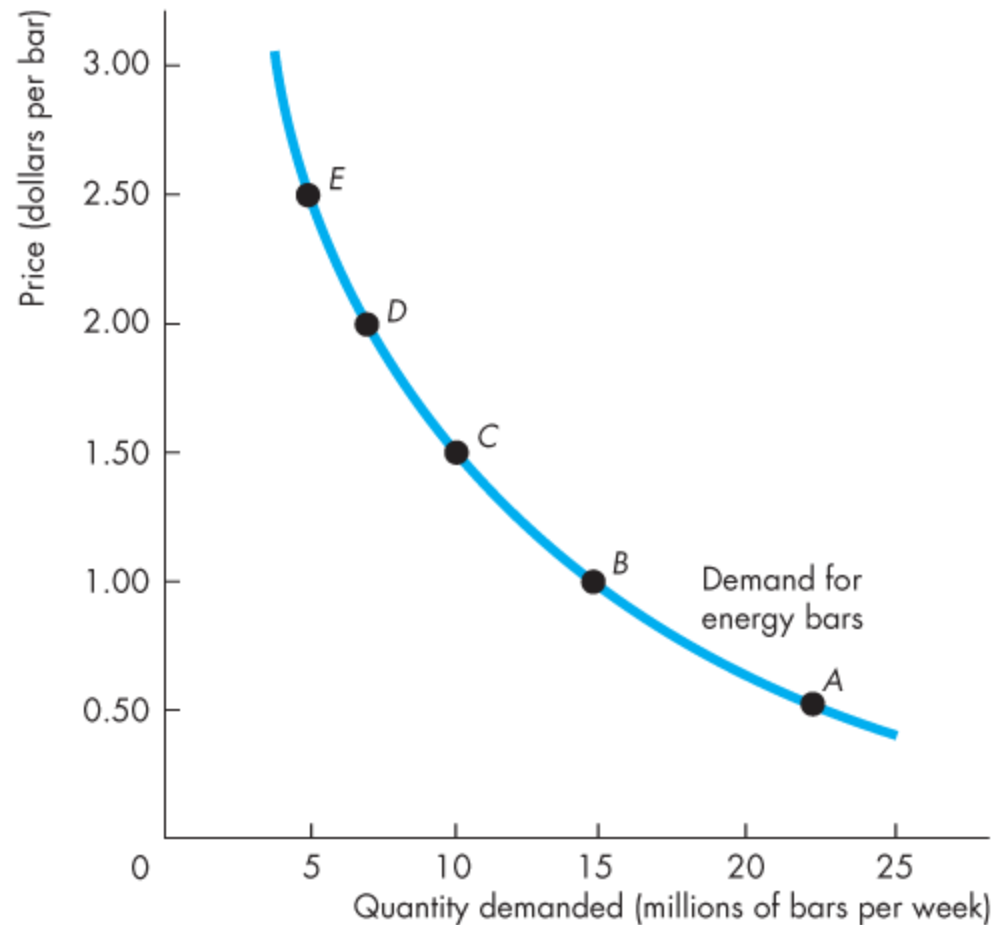
The term **demand** refers to the entire relationship between the price of the good and quantity demanded of the good.

A **demand curve** shows the relationship between the quantity demanded of a good and its price when all other influences on consumers' planned purchases remain the same.

Demand

Figure 3.1: Demand curve for energy bars.

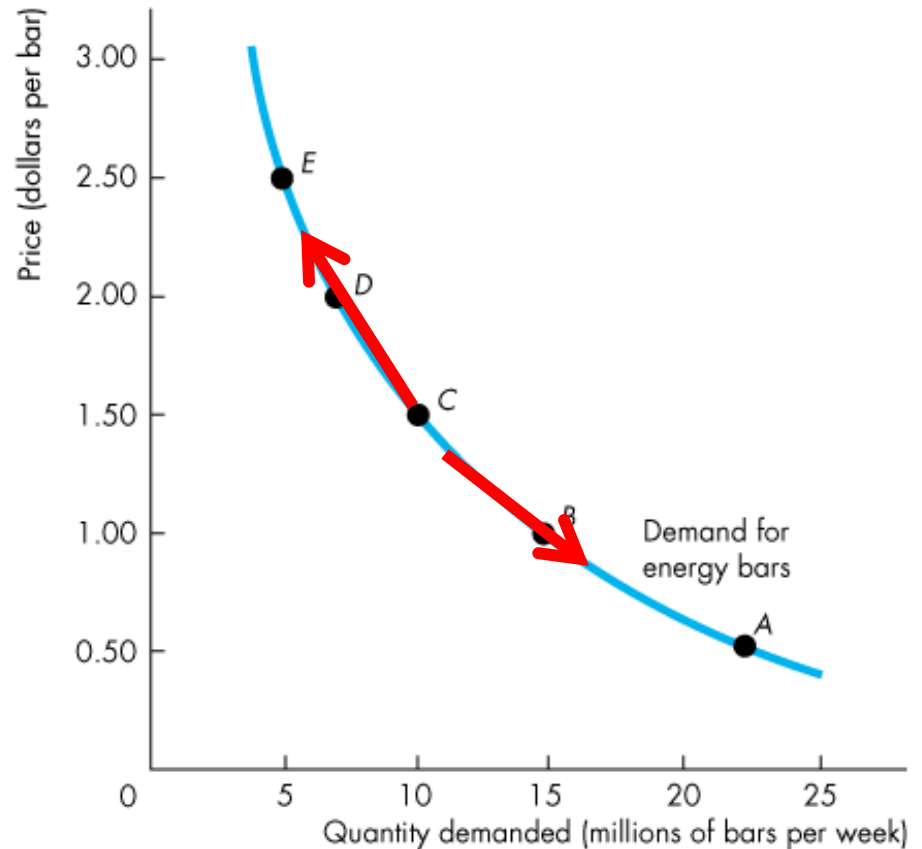
	Price (dollars per bar)	Quantity demanded (millions of bars per week)
A	0.50	22
B	1.00	15
C	1.50	10
D	2.00	7
E	2.50	5



Demand

A rise in the price, other things remaining the same, brings a decrease in the quantity demanded and a movement up along the demand curve.

A fall in the price, other things remaining the same, brings an increase in the quantity demanded and a movement down along the demand curve.



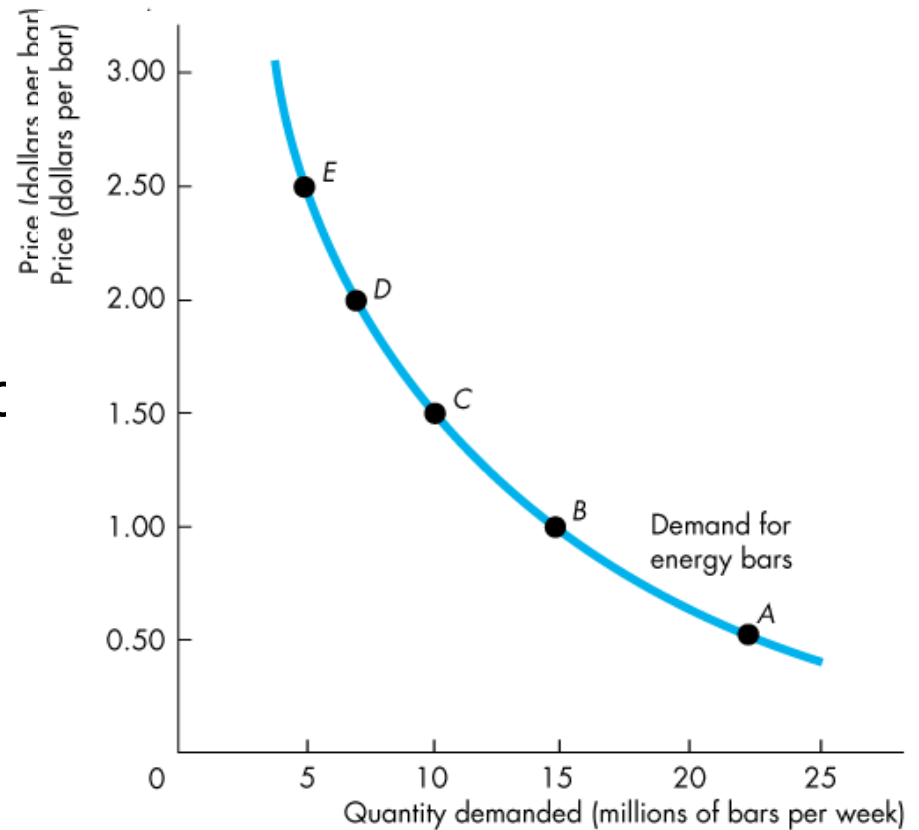
Demand

Willingness and Ability to Pay

A demand curve is also a *willingness-and-ability-to-pay* curve.

The smaller the quantity available, the higher is the price that someone is willing to pay another unit.

Willingness to pay measures *marginal benefit*.



Demand

A Change in Demand

Six main factors that change demand are

- a. The prices of related goods
- b. Expected future prices
- c. Income
- d. Expected future income and credit
- e. Population
- f. Preferences

Demand

a. Prices of Related Goods

A **substitute** is a good that can be used in place of another good.

A **complement** is a good that is used in conjunction with another good.

When the price of substitute for an energy bar rises or when the price of a complement of an energy bar falls, the demand for energy bars increases.

Demand

Expected Future Prices

If the expected future price of a good rises, current demand for the good increases and the demand curve shifts rightward.

Income

When income increases, consumers buy more of *most* goods and the demand curve shifts rightward.

A **normal good** is one for which demand increases as income increases.

An **inferior good** is a good for which demand decreases as income increases.

Demand

Expected Future Income and Credit

When expected future income increases or when credit is easy to obtain, the demand might increase now.

Population

The larger the population, the greater is the demand for all goods.

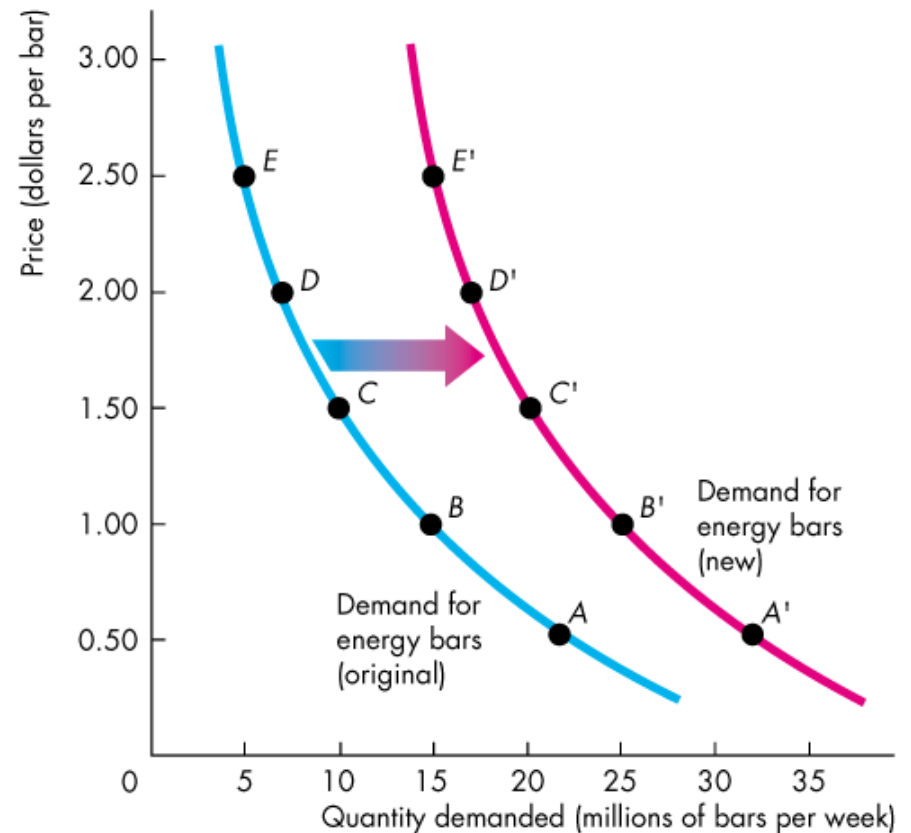
Preferences

People with the same income have different demands if they have different preferences.

Demand

Figure 3.2 shows an increase in demand.

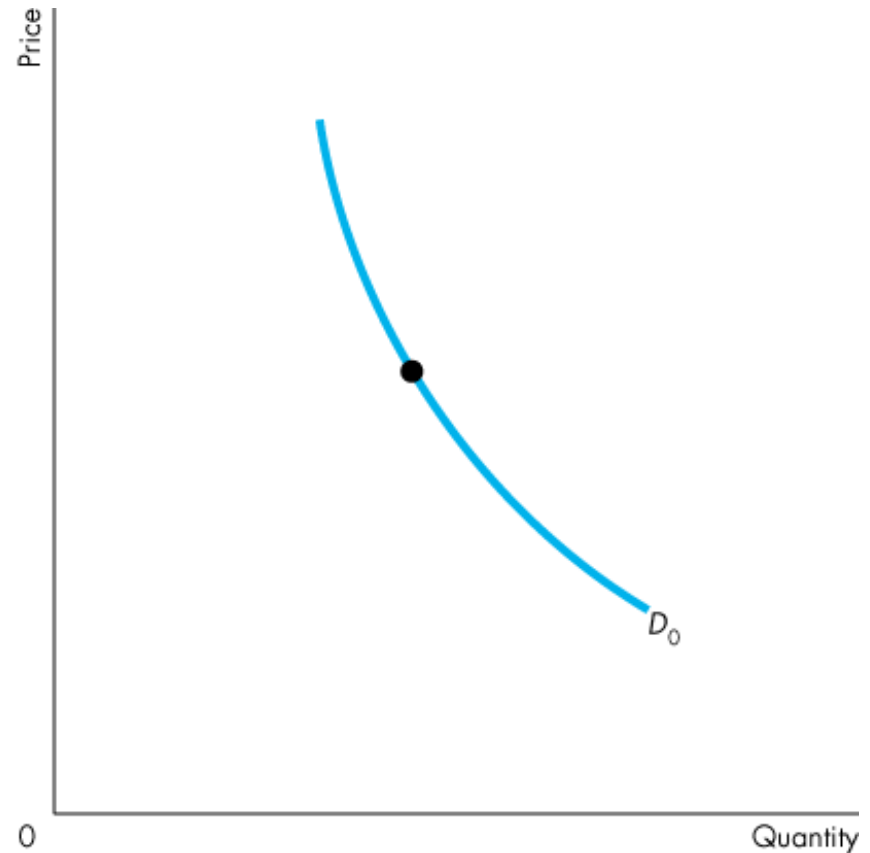
Because an energy bar is a normal good, an increase in income increases the demand for energy bars.



Demand

A Change in the Quantity Demanded Versus a Change in Demand

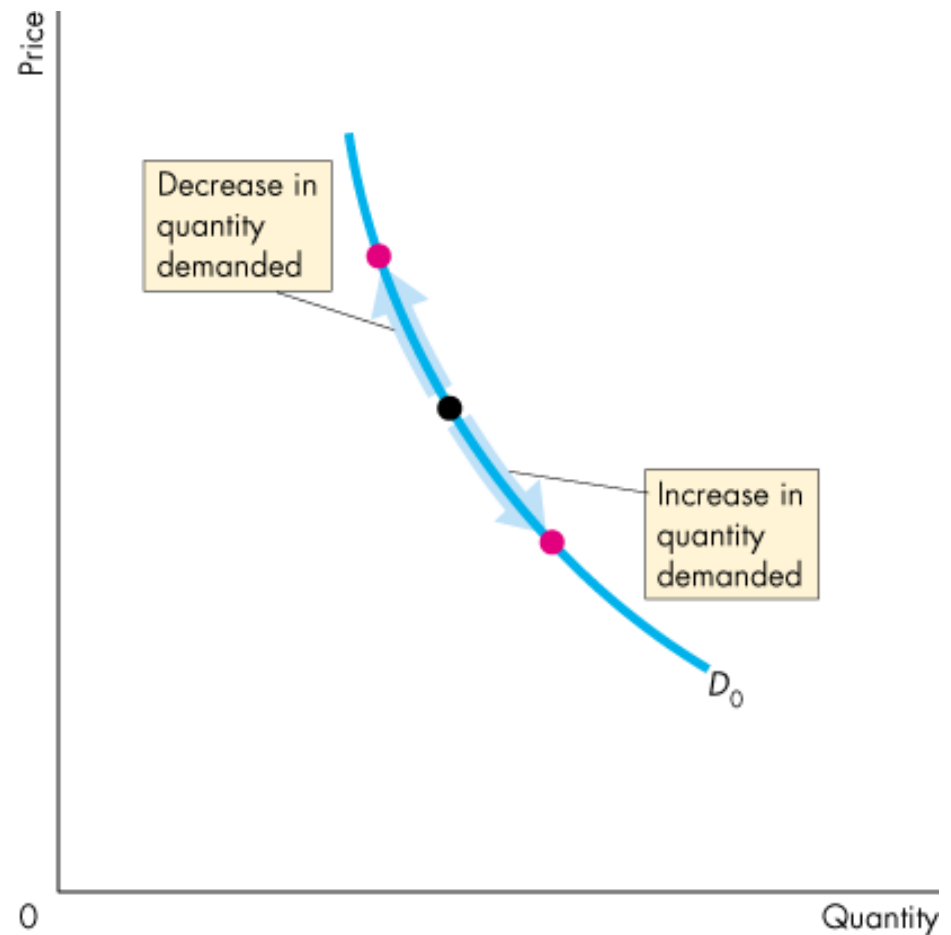
Figure 3.3 illustrates the distinction between a change in demand and a change in the quantity demanded.



Demand

Movement Along the Demand Curve

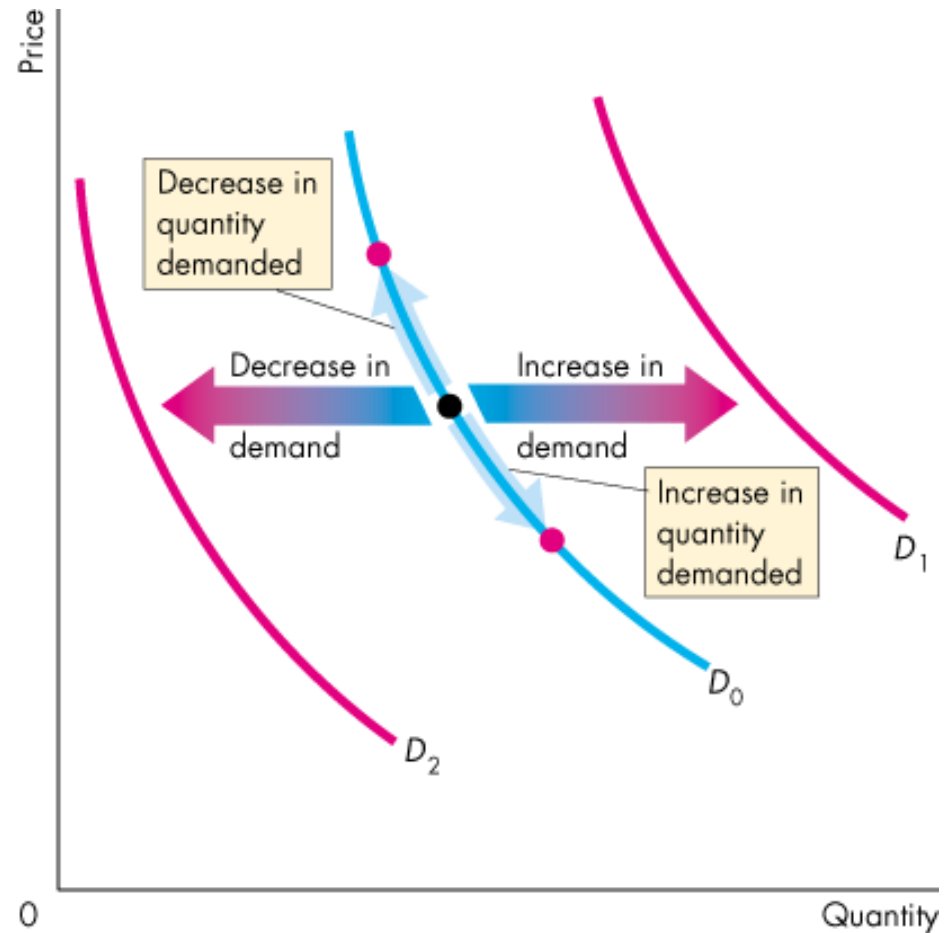
When the price of the good changes and everything else remains the same, the quantity demanded changes and there is a movement along the demand curve.



Demand

A Shift of the Demand Curve

If the price remains the same but one of the other influences on buyers' plans changes, demand changes and the demand curve shifts.



Supply

If a firm supplies a good or service, then the firm

1. Has the resources and the technology to produce it,
2. Can profit from producing it, and
3. Has made a definite plan to produce and sell it.

Resources and *technology* determine what it is possible to produce. Supply reflects a decision about which technologically feasible items to produce.

The **quantity supplied** of a good or service is the amount that producers plan to sell during a given time period at a particular price.

Supply

The Law of Supply

The **law of supply** states:

Other things remaining the same, the higher the price of a good, the greater is the quantity supplied; and

the lower the price of a good, the smaller is the quantity supplied.

The law of supply results from the general tendency for the marginal cost of producing a good or service to increase as the quantity produced increases (Chapter 2, page 33).

Producers are willing to supply a good only if they can at least cover their marginal cost of production.

Supply

Supply Curve and Supply Schedule

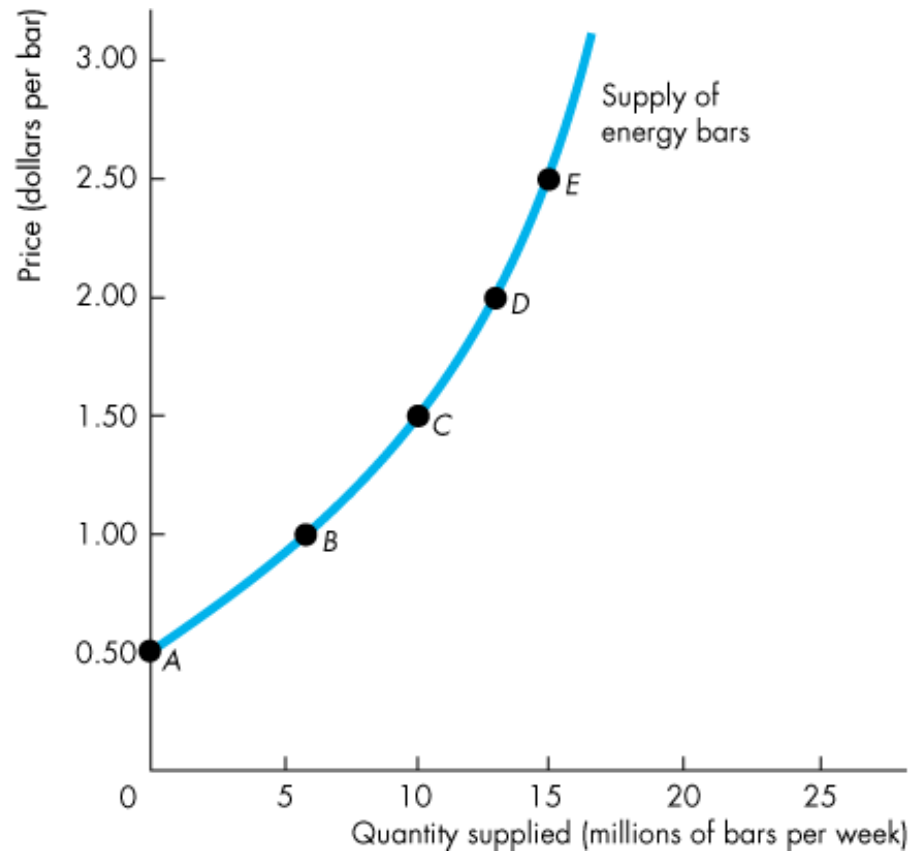
The term **supply** refers to the entire relationship between the quantity supplied and the price of a good.

The **supply curve** shows the relationship between the quantity supplied of a good and its price when all other influences on producers' planned sales remain the same.

Supply

Figure 3.4 shows a supply curve of energy bars.

A rise in the price of an energy bar, other things remaining the same, brings an increase in the quantity supplied.



Supply

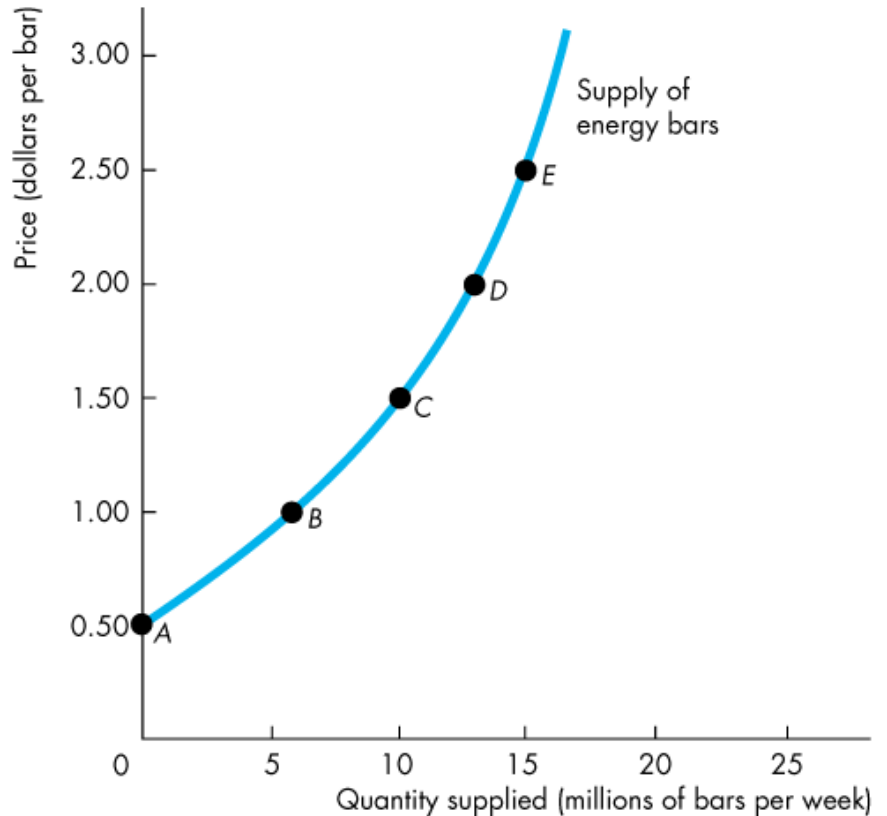
Minimum Supply Price

A supply curve is also a *minimum-supply-price* curve.

As the quantity produced increases, marginal cost increases.

The lowest price at which someone is willing to sell an additional unit rises.

This lowest price is *marginal cost*.



Supply

A Change in Supply

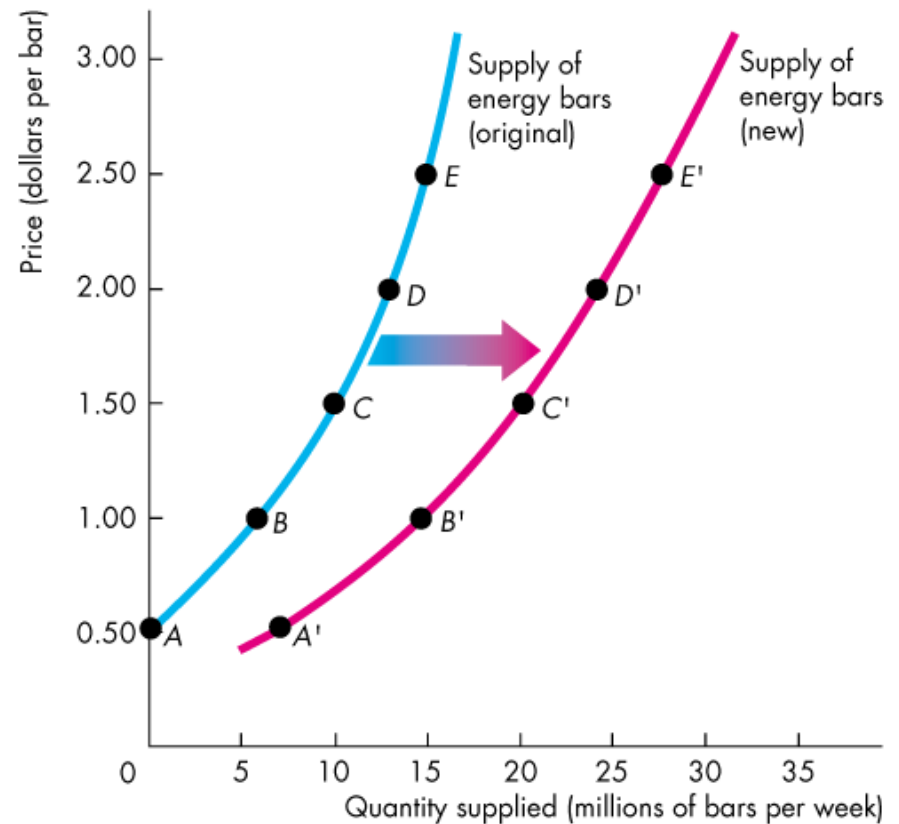
The six main factors that change supply of a good are

- a. The prices of factors of production
- b. The prices of related goods produced
- c. Expected future prices
- d. The number of suppliers
- e. Technology
- f. State of nature

Supply

Figure 3.5 shows an increase in supply.

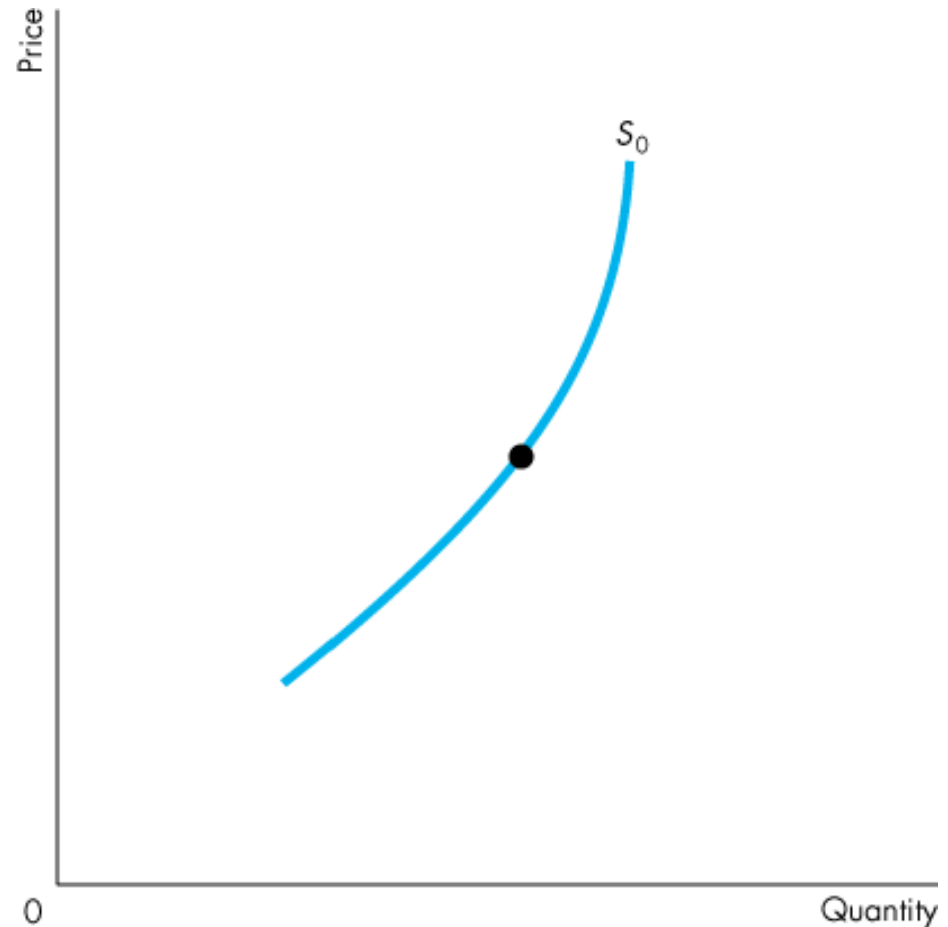
An advance in the technology for producing energy bars increases the supply of energy bars and shifts the supply curve rightward.



Supply

A Change in the Quantity Supplied Versus a Change in Supply

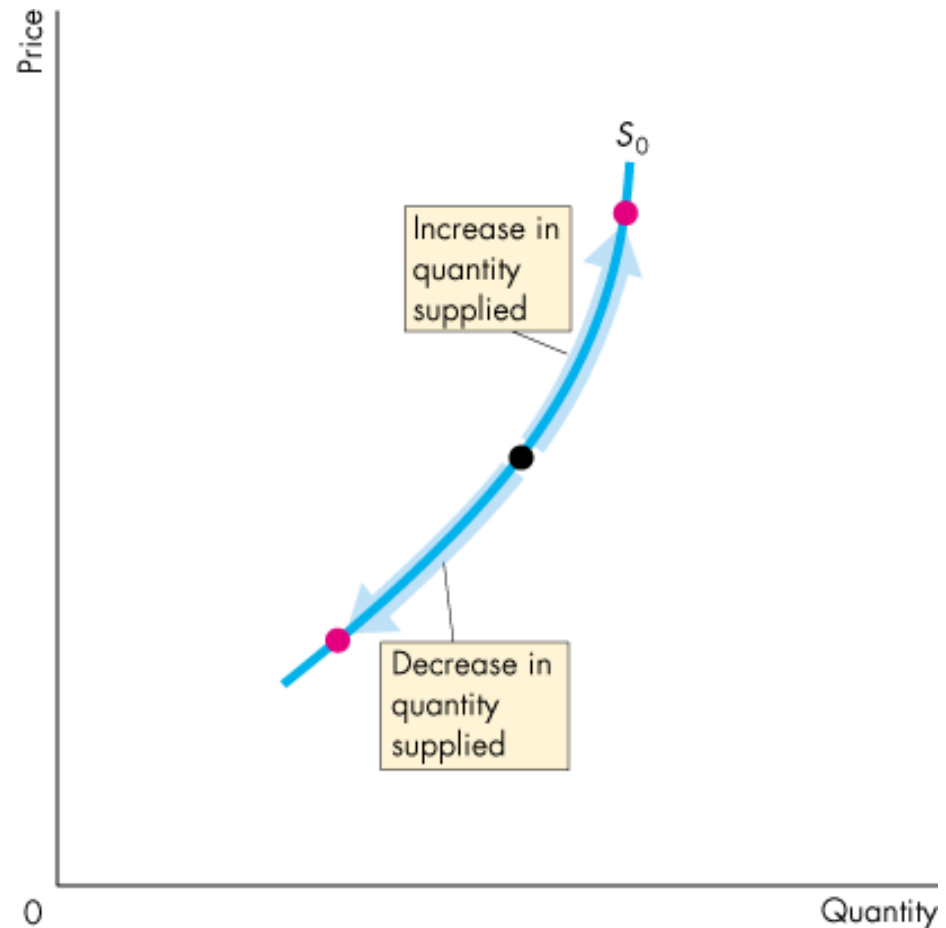
Figure 3.6 illustrates the distinction between a change in supply and a change in the quantity supplied.



Supply

Movement Along the Supply Curve

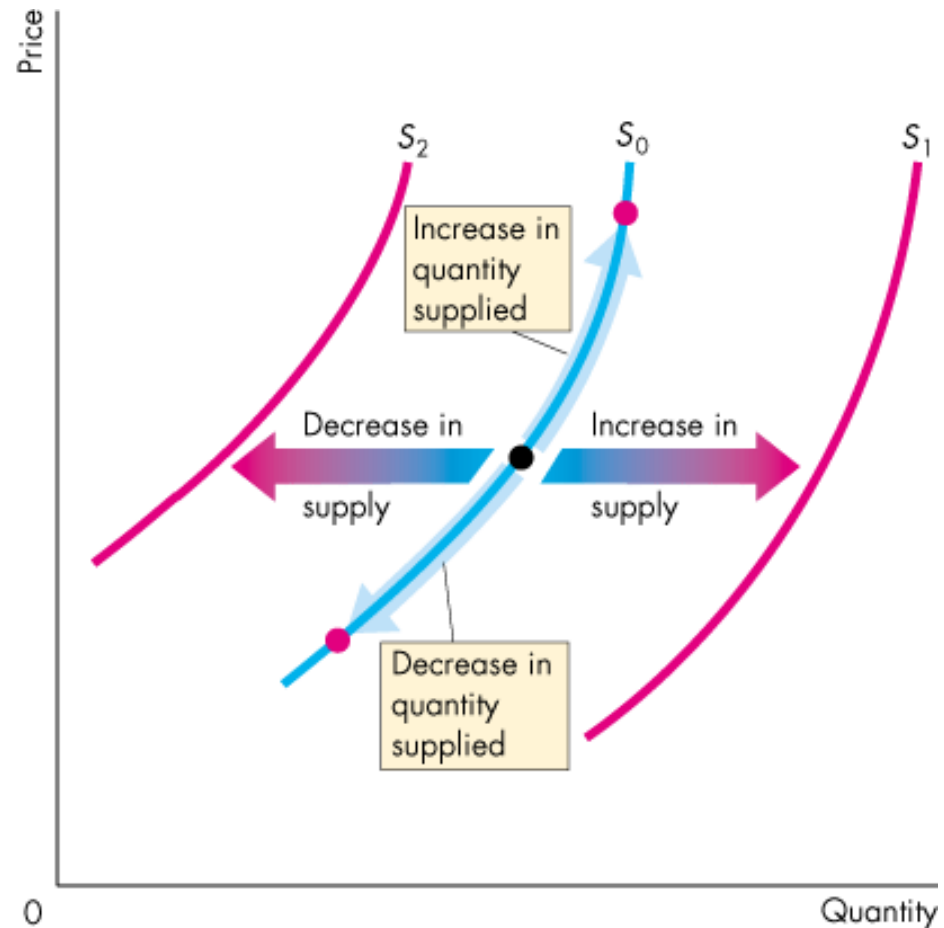
When the price of the good changes and other influences on sellers' plans remain the same, the quantity supplied changes and there is a movement along the supply curve.



Supply

A Shift of the Supply Curve

If the price remains the same but some other influence on sellers' plans changes, supply changes and the supply curve shifts.



Market Equilibrium

Equilibrium is a situation in which opposing forces balance each other. Equilibrium in a market occurs when the price balances the plans of buyers and sellers.

The **equilibrium price** is the price at which the quantity demanded equals the quantity supplied.

The **equilibrium quantity** is the quantity bought and sold at the equilibrium price.

- Price regulates buying and selling plans.
- Price adjusts when plans don't match.

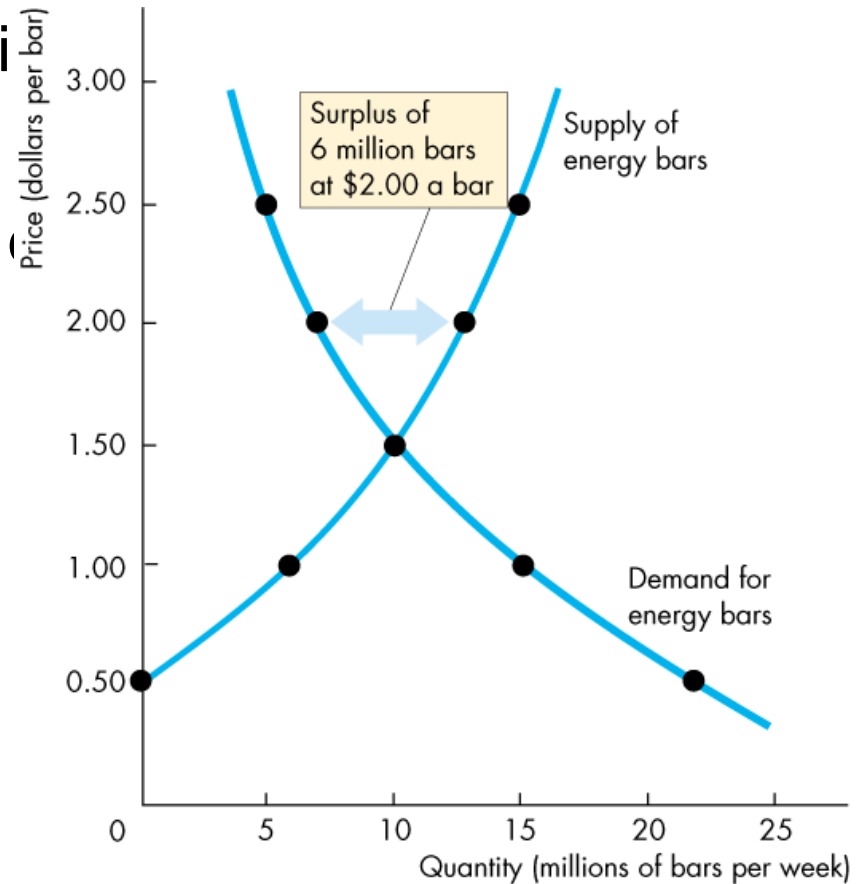
Market Equilibrium

Price as a Regulator

Figure 3.7 illustrates the equilibrium quantity.

If the price is \$2.00 a bar, the quantity demanded is 13 million bars and the quantity supplied is 7 million bars.

There is a *surplus* of 6 million energy bars.



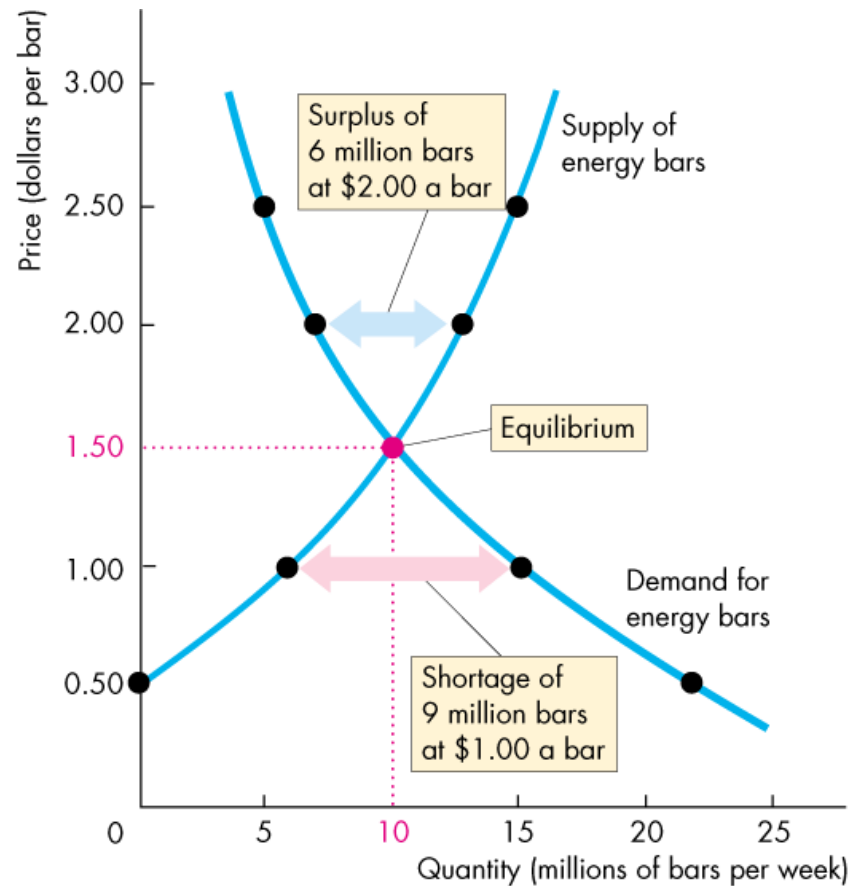
Market Equilibrium

If the price is \$1.00 a bar, the quantity demanded *exceeds* the quantity supplied.

There is a *shortage* of 9 million energy bars.

If the price is \$1.50 a bar, the quantity demanded *equals* the quantity supplied.

There is neither a shortage nor a surplus of energy bars.



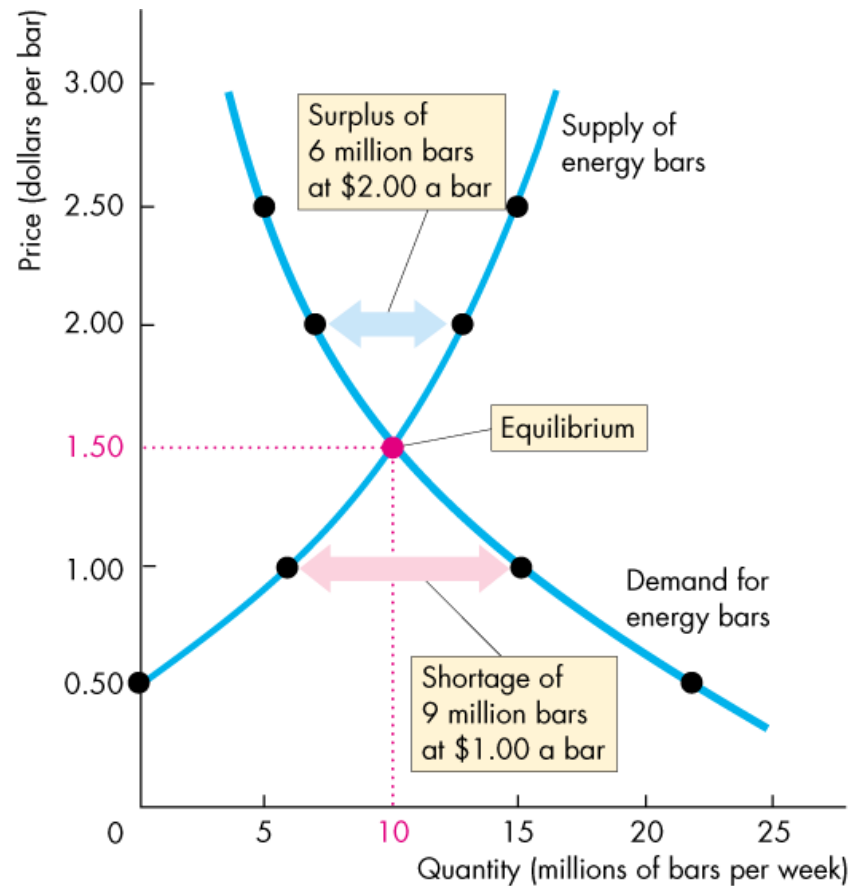
Market Equilibrium

Price Adjustments

At any price above the equilibrium price, a *surplus* forces the price down.

At any price below the equilibrium price, a *shortage* forces the price up.

At the equilibrium price, buyers' plans and sellers' plans agree and the price doesn't change until some event changes either demand or supply.



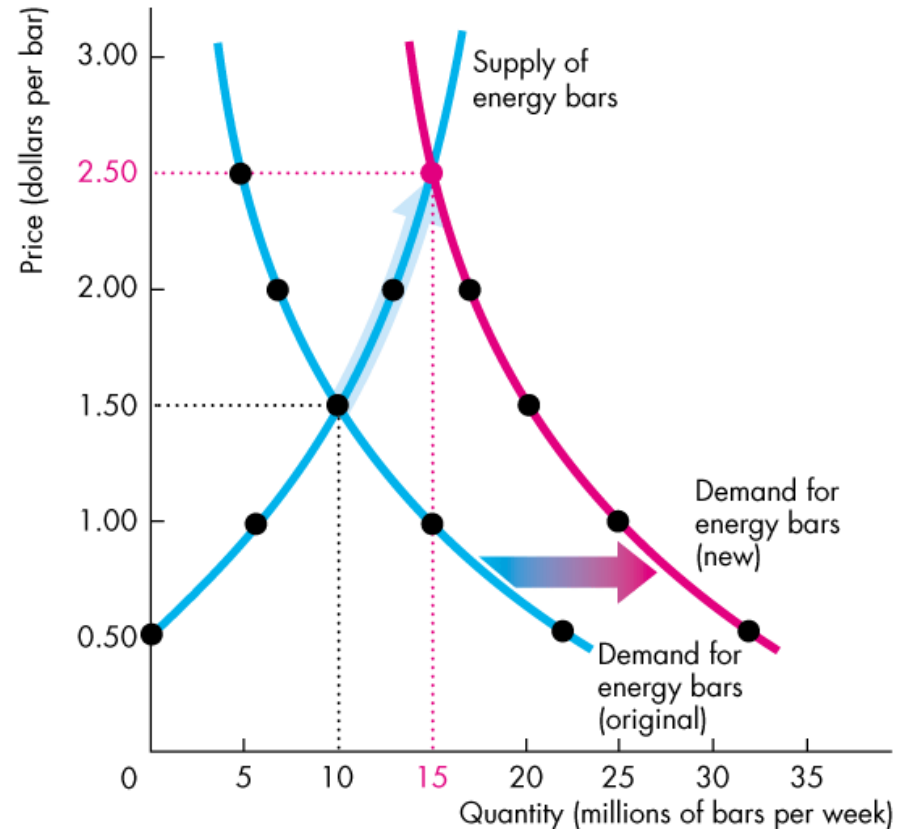
Predicting Changes in Price and Quantity

An Increase in Demand

Figure 3.8 shows that when demand increases the demand curve shifts rightward.

At the original price, there is now a *shortage*.

The price rises, and the quantity supplied increases along the supply curve.



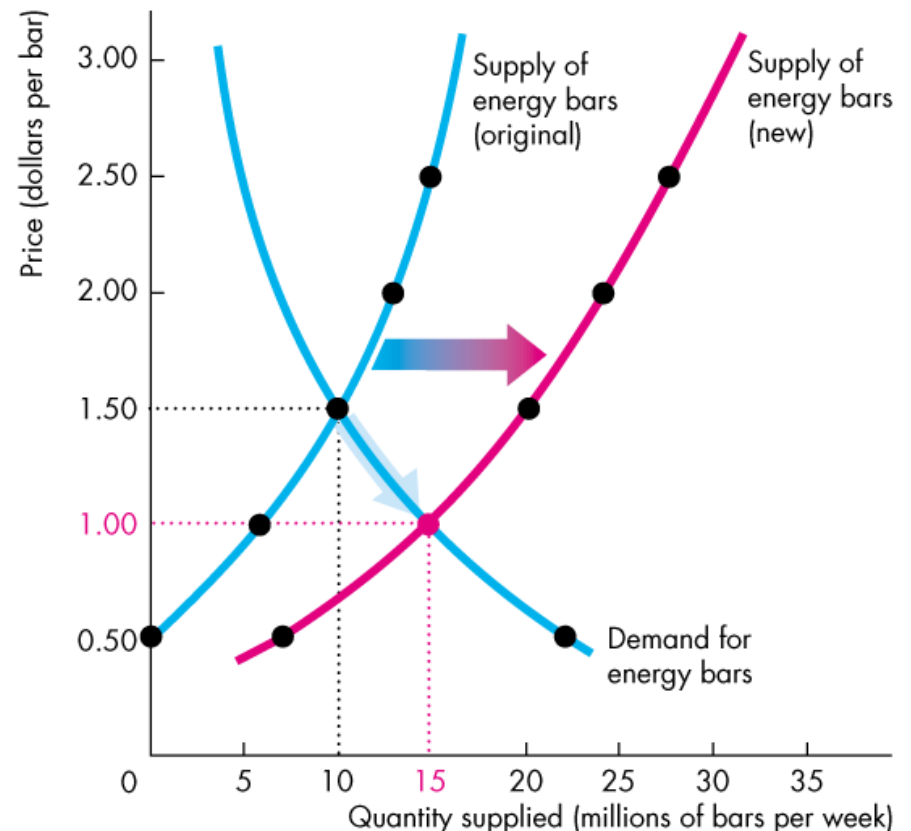
Predicting Changes in Price and Quantity

An Increase in Supply

Figure 3.9 shows that when supply increases the supply curve shifts rightward.

At the original price, there is now a *surplus*.

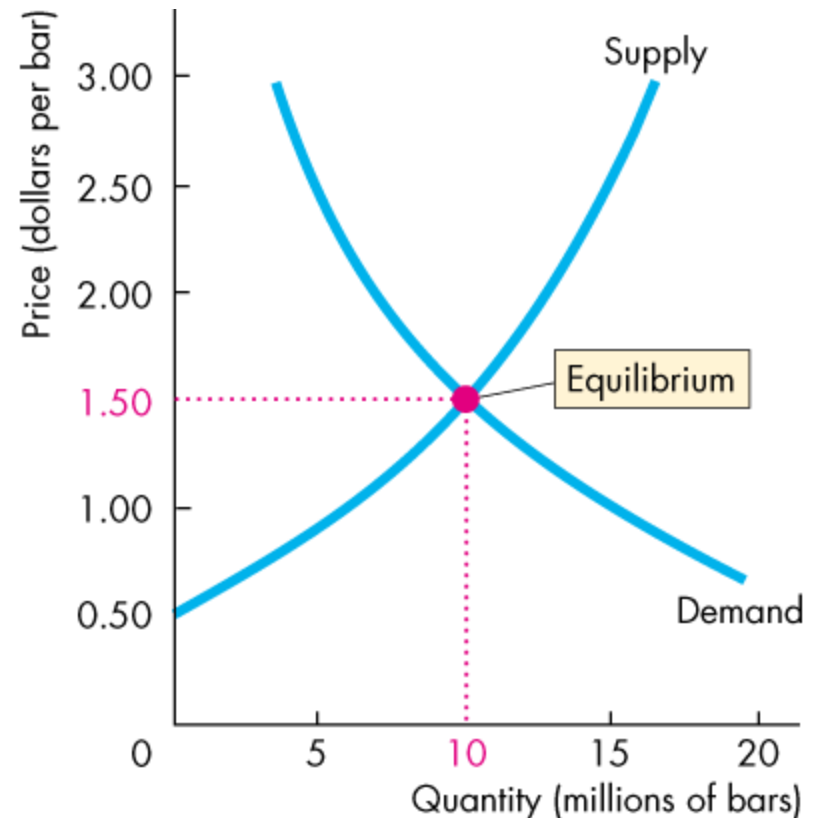
The price falls, and the quantity demanded increases along the demand curve.



Predicting Changes in Price and Quantity

All Possible Changes in Demand and Supply

A change demand or supply or both demand and supply changes the equilibrium price and the equilibrium quantity.



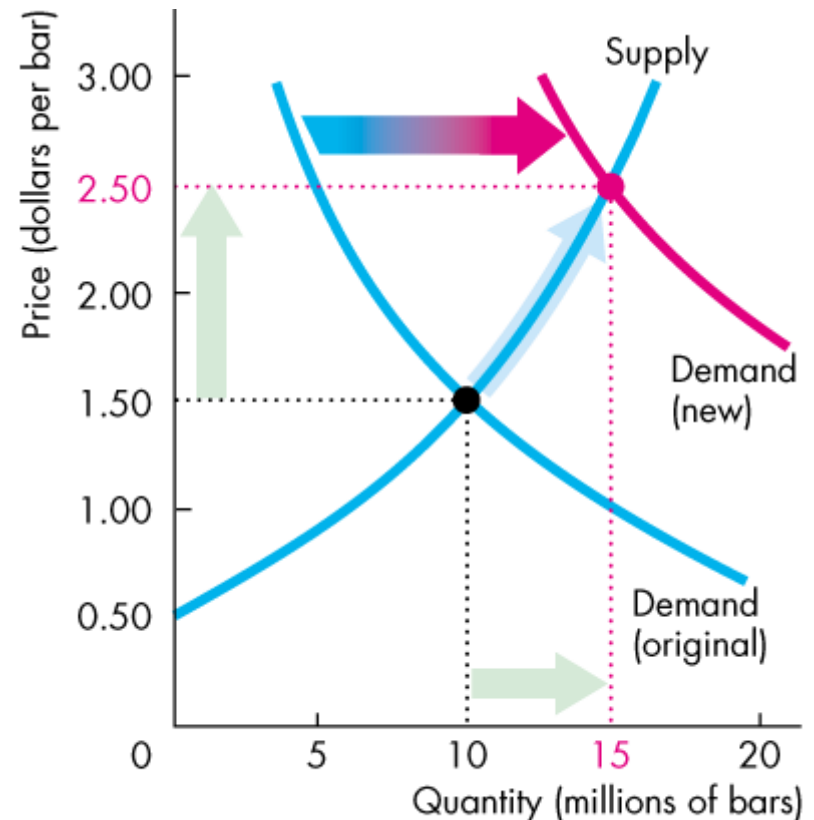
(a) No change in demand or supply

Predicting Changes in Price and Quantity

Change in Demand with No Change in Supply

When demand increases, there is a movement up along the supply curve.

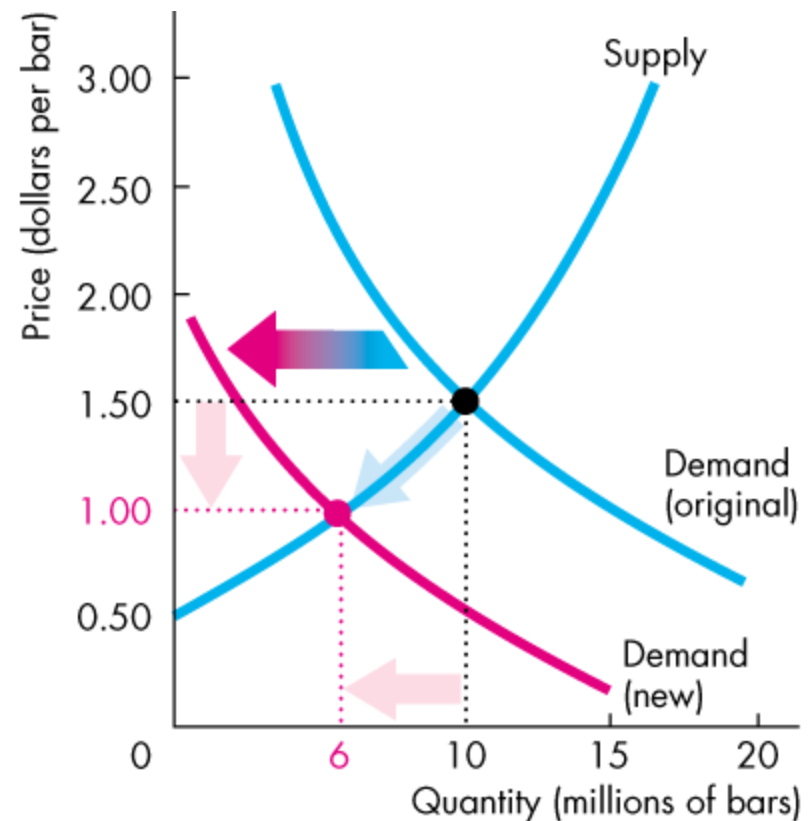
The equilibrium price *rises* and the equilibrium quantity *increases*.



(b) Increase in demand

Predicting Changes in Price and Quantity

When demand decreases, the equilibrium price *falls* and the equilibrium quantity *decreases*.



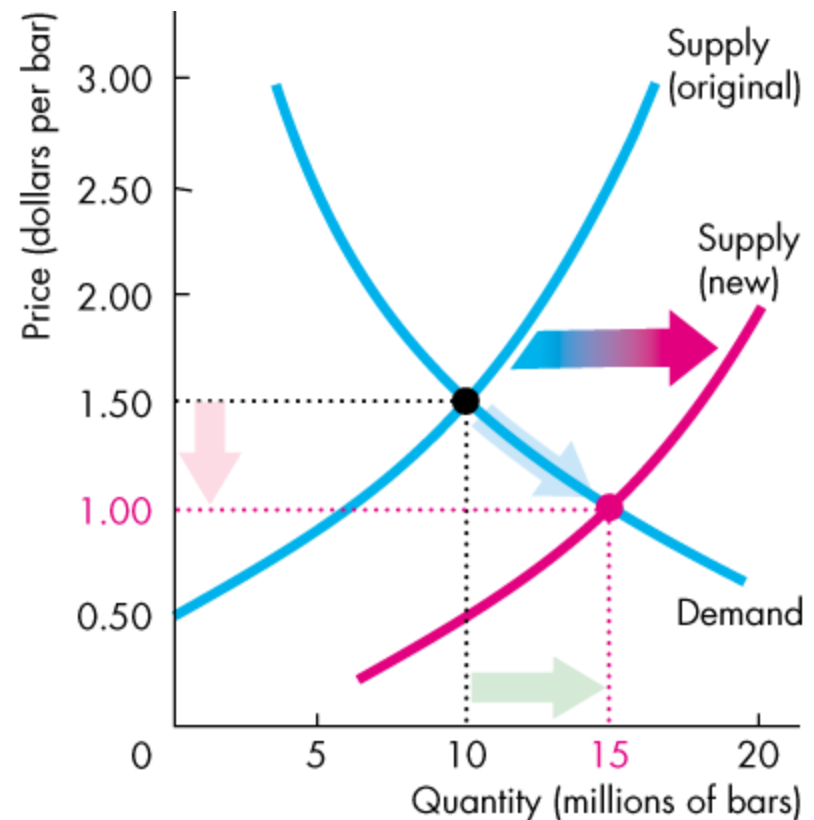
(c) **Decrease in demand**

Predicting Changes in Price and Quantity

Change in Supply with No Change in Demand

When supply increases, there is a movement down along the demand curve.

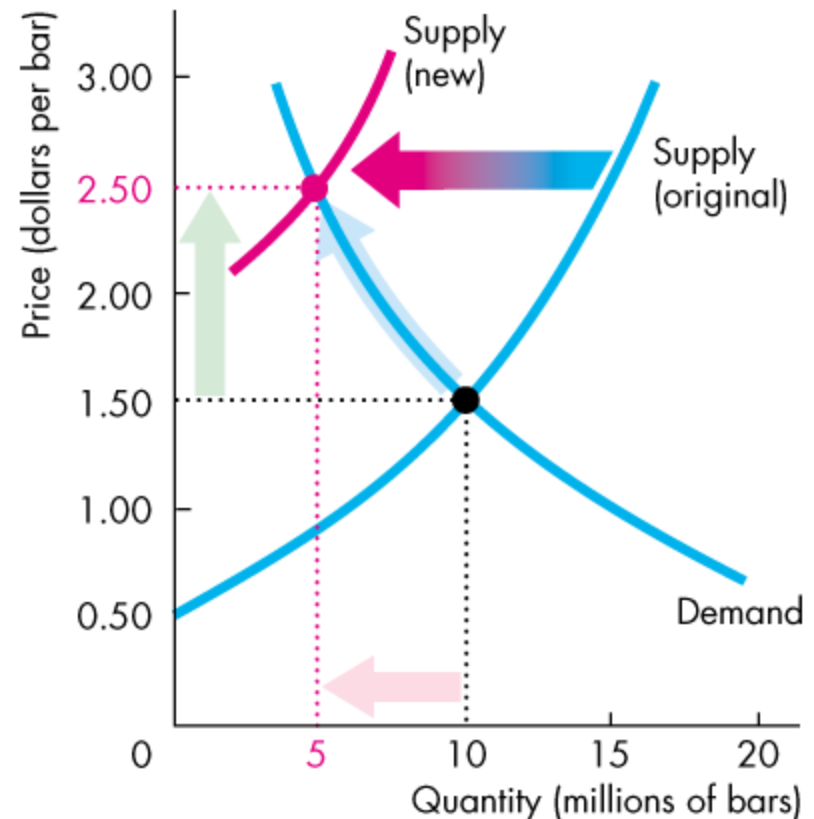
The equilibrium price *falls* and the equilibrium quantity *increases*.



(d) Increase in supply

Predicting Changes in Price and Quantity

When supply decreases,
the equilibrium price *rises*
and the equilibrium
quantity *decreases*.



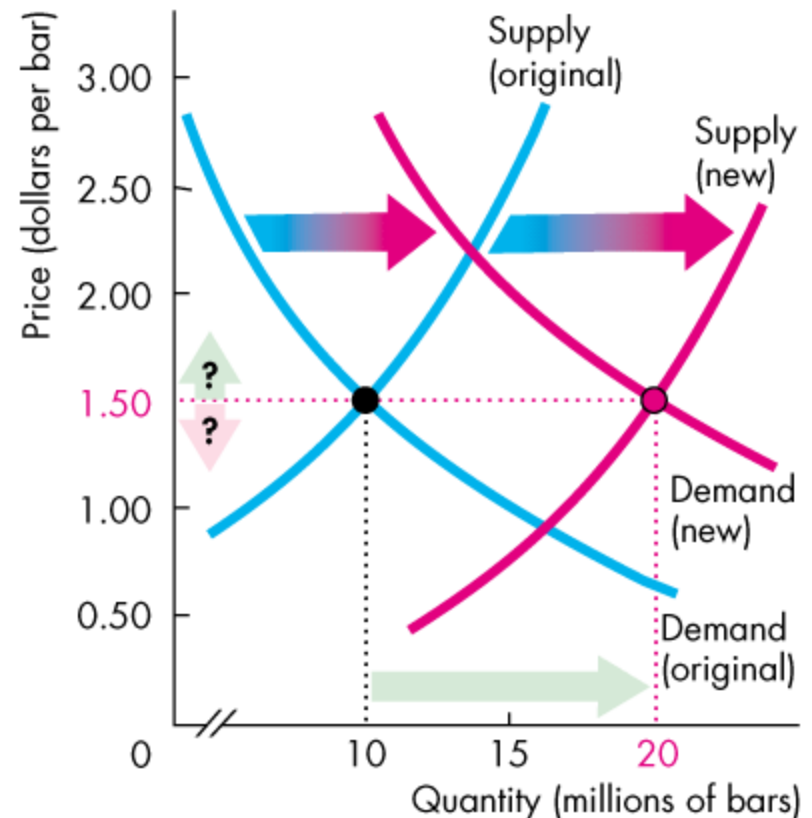
(g) Decrease in supply

Predicting Changes in Price and Quantity

Increase in Both Demand and Supply

An increase in demand and an increase in supply *increase* the equilibrium quantity.

The change in equilibrium price is *uncertain* because the increase in demand raises the equilibrium price and the increase in supply lowers it.



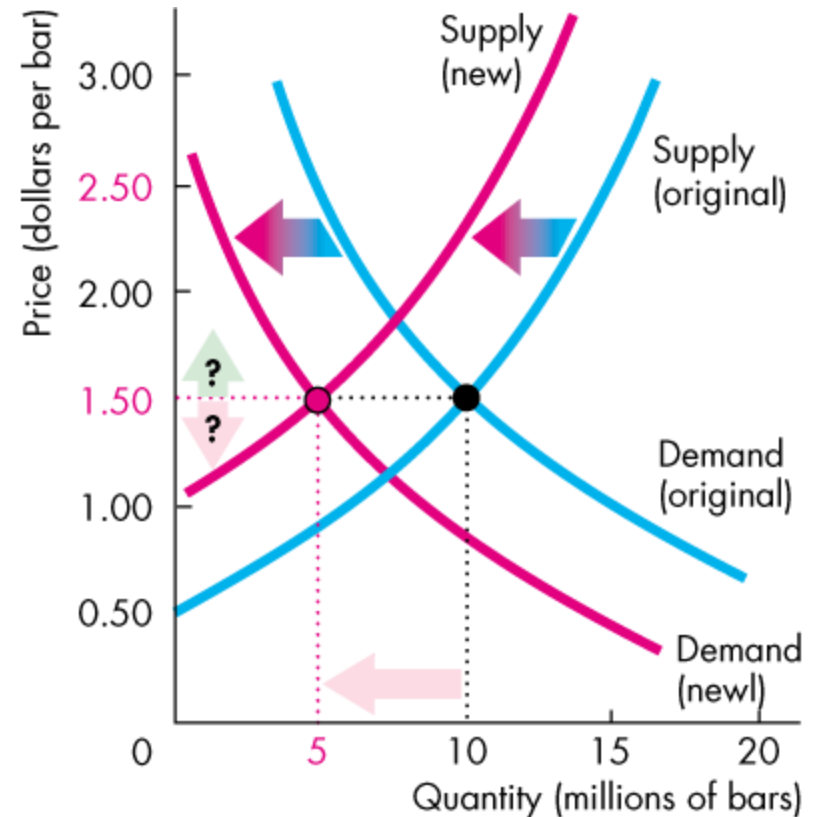
(e) Increase in both demand and supply

Predicting Changes in Price and Quantity

Decrease in Both Demand and Supply

A decrease in both demand and supply *decreases* the equilibrium quantity.

The change in equilibrium price is *uncertain* because the decrease in demand lowers the equilibrium price and the decrease in supply raises it.



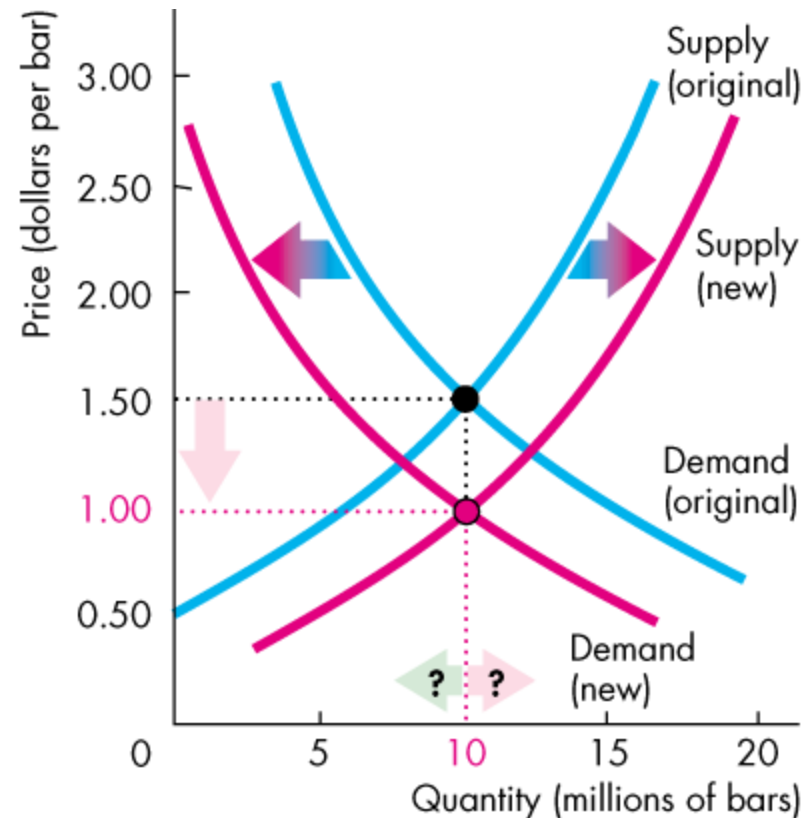
(i) Decrease in both demand and supply

Predicting Changes in Price and Quantity

Decrease in Demand and Increase in Supply

A decrease in demand and an increase in supply *lowers* the equilibrium price.

The change in equilibrium quantity is *uncertain* because the decrease in demand decreases the equilibrium quantity and the increase in supply increases it.



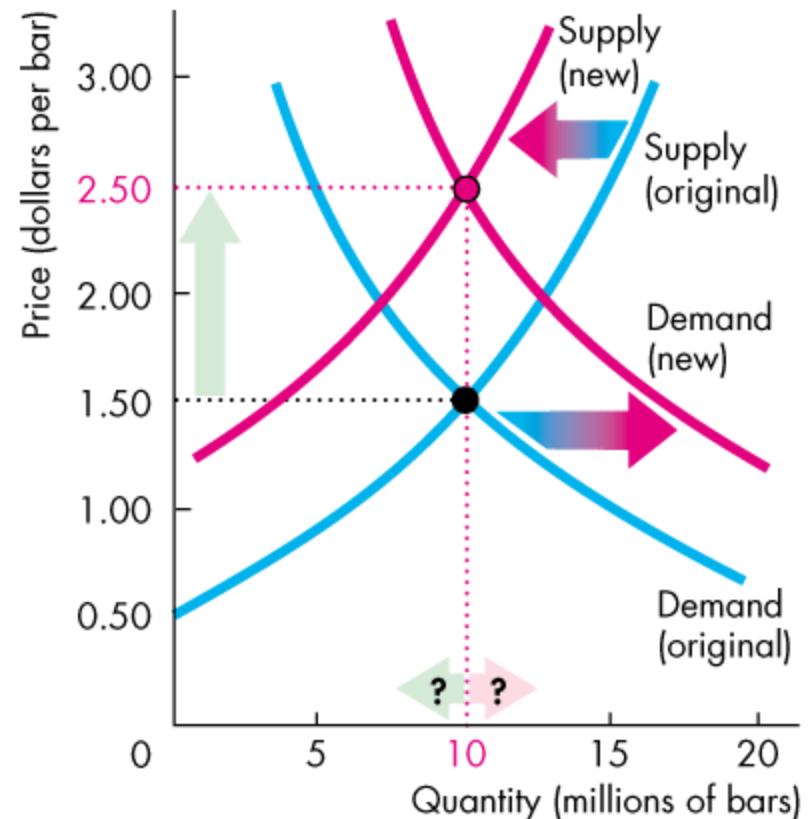
(f) Decrease in demand and increase in supply

Predicting Changes in Price and Quantity

Increase in Demand and Decrease in Supply

An increase in demand and a decrease in supply *raises* the equilibrium price.

The change in equilibrium quantity is *uncertain* because the increase in demand increases the equilibrium quantity and the decrease in supply decreases it.



(h) Increase in demand and decrease in supply