Economics

DEMAND AND SUPPLY

Ch.3 OUTLINE

- 3.1: Demand, Supply, and Equilibrium in Markets for Goods and Services
- 3.2: Shifts in Demand and Supply for Goods and Services
- 3.3: Changes in Equilibrium Price and Quantity: The Four-Step Process
- 3.4: Price Ceilings and Price Floors
- 3.5: Demand, Supply, and Efficiency

Why Does It Cost More?

- Organic vegetables and fruits that are grown and sold within a specific geographical region should, in theory, cost less than conventional produce because the transportation costs are less. That is not, however, usually the case. This is caused by demand and supply.

(Credit: modification of "Old Farmers' Market" by NatalieMaynor/Flickr, CC BY 2.0)

3.1 Demand, Supply, and Equilibrium in Markets for Goods and Services

- **Demand** - the amount of some good or service consumers are willing and able to purchase at each price.

- **Price** - what a buyer pays for a unit of the specific good or service.

- **Quantity demanded** - the total number of units of a good or service consumers are willing to purchase at a given price

- **Law of demand** - keeping all other variables that affect demand constant,

  - if price goes ⇧, then quantity demanded goes ⇩

  - if price goes ⇩, then quantity demanded goes ⇧

Demand Schedule & Curve

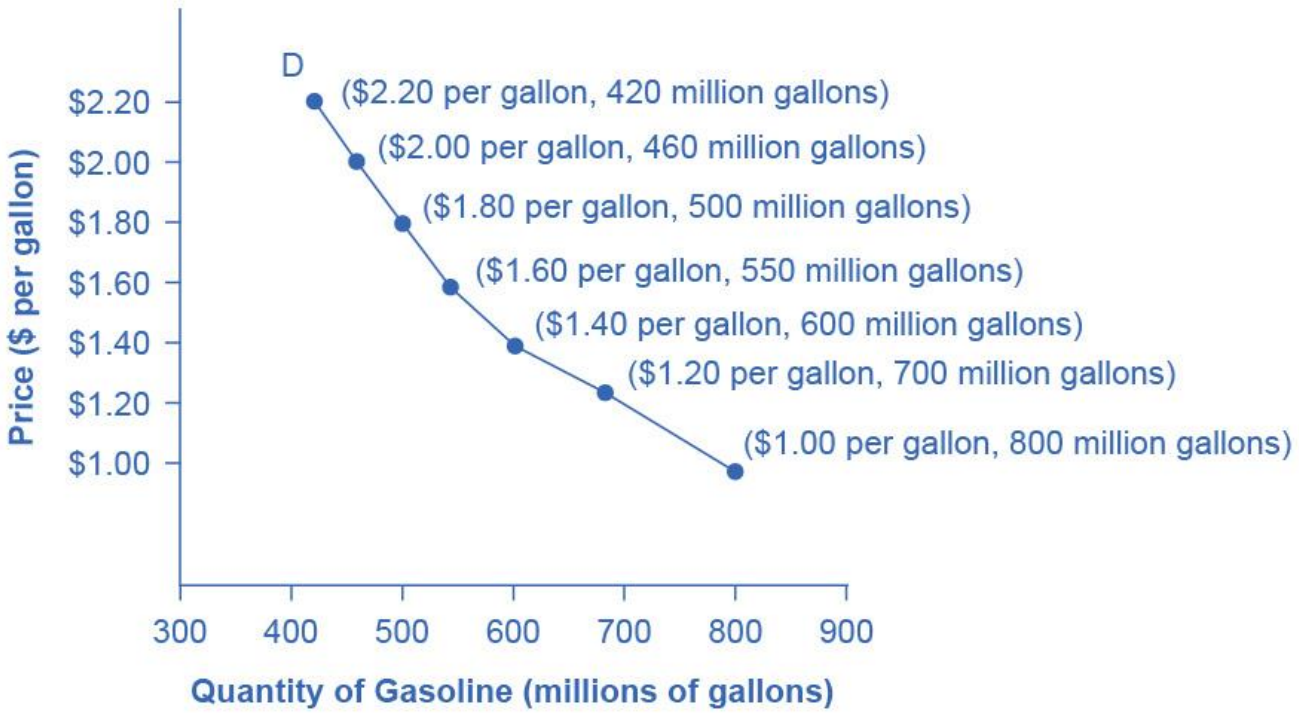
- **Demand schedule** - a table that shows a range of prices for a certain good or service and the quantity demanded at each price.

- **Demand curve** - a graphic representation of the relationship between price and quantity demanded of a certain good or service, with quantity on the horizontal axis and the price on the vertical axis.

Graphing the Demand

- The points of a demand schedule are graphed, and the line connecting them is the demand curve (D).

- The *downward* slope of the demand curve again illustrates the law of demand - the inverse relationship between prices and quantity demanded.



Supply of Goods and Services

- **Supply** - the amount of some good or service a producer is willing to supply at each price.

- **Quantity supplied** - the total number of units of a good or service producers are willing to sell at a given price.

- **Law of supply** - assuming all other variables that affect supply are held constant,
  - if price goes ⇧ , then quantity supplied goes ⇧
  - if price goes ⇩ , then quantity supplied goes ⇩

Supply Schedule & Curve

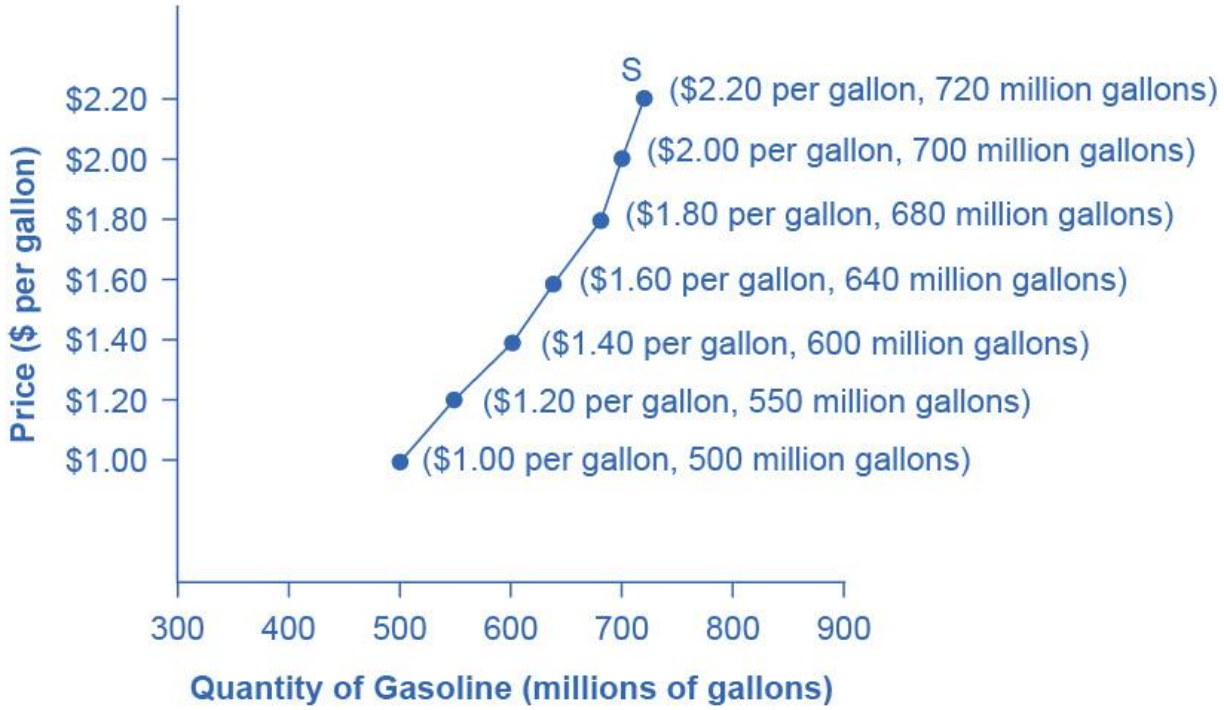
- **Supply schedule** - a table that shows the quantity supplied at a range of different prices.

- **Supply curve** - a graphic illustration of the relationship between price, shown on the vertical axis, and quantity, shown on the horizontal axis.

Graphing the Supply

- The supply curve (S) is created by graphing the points from a supply schedule and then connecting them.

- The *upward* slope of the supply curve illustrates the law of supply - that a higher price leads to a higher quantity supplied, and vice versa.

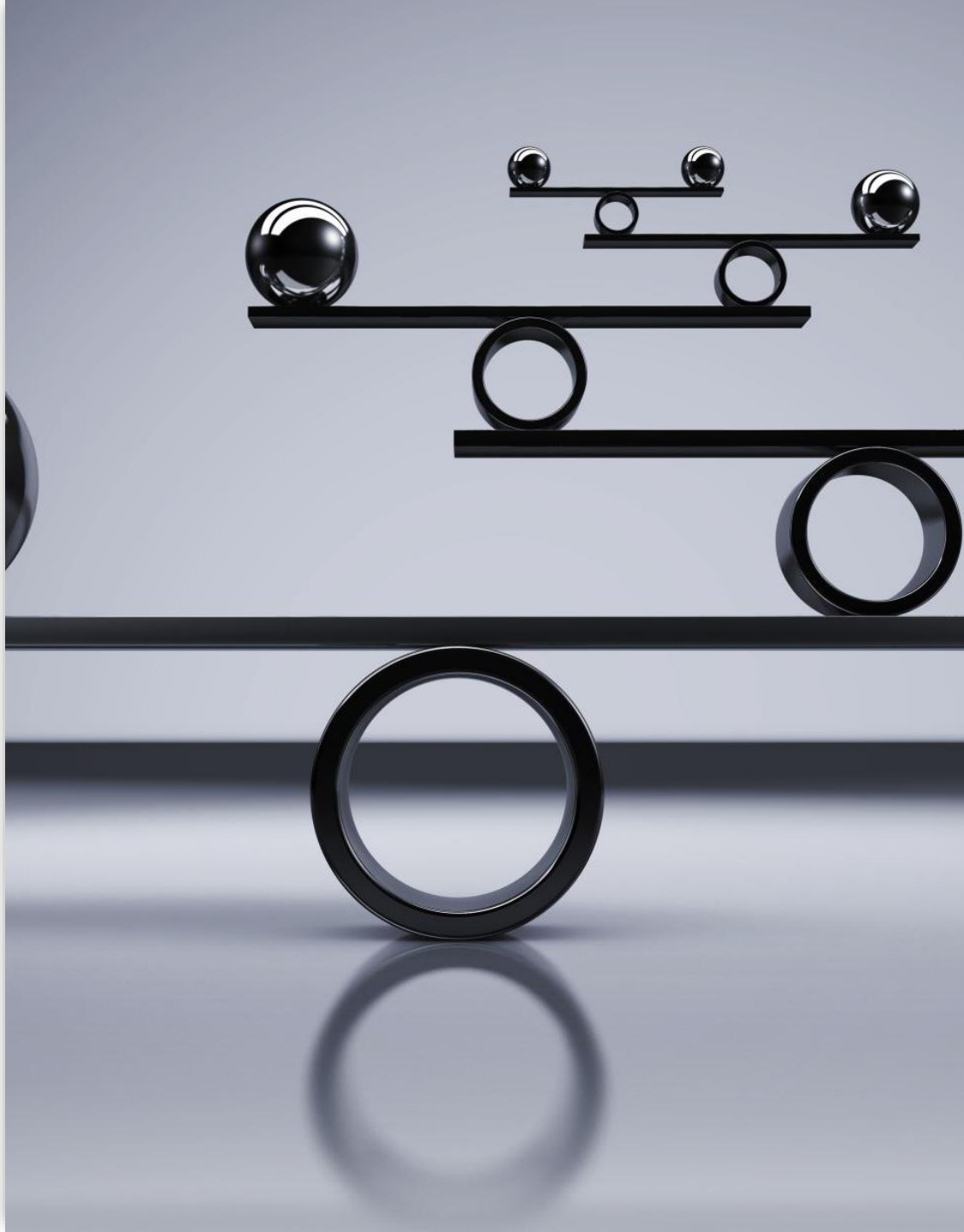


Equilibrium - Where Demand and Supply Intersect

- **Equilibrium** - the combination of price and quantity where there is no economic pressure from surpluses or shortages that would cause price or quantity to change

quantity demanded = quantity supplied

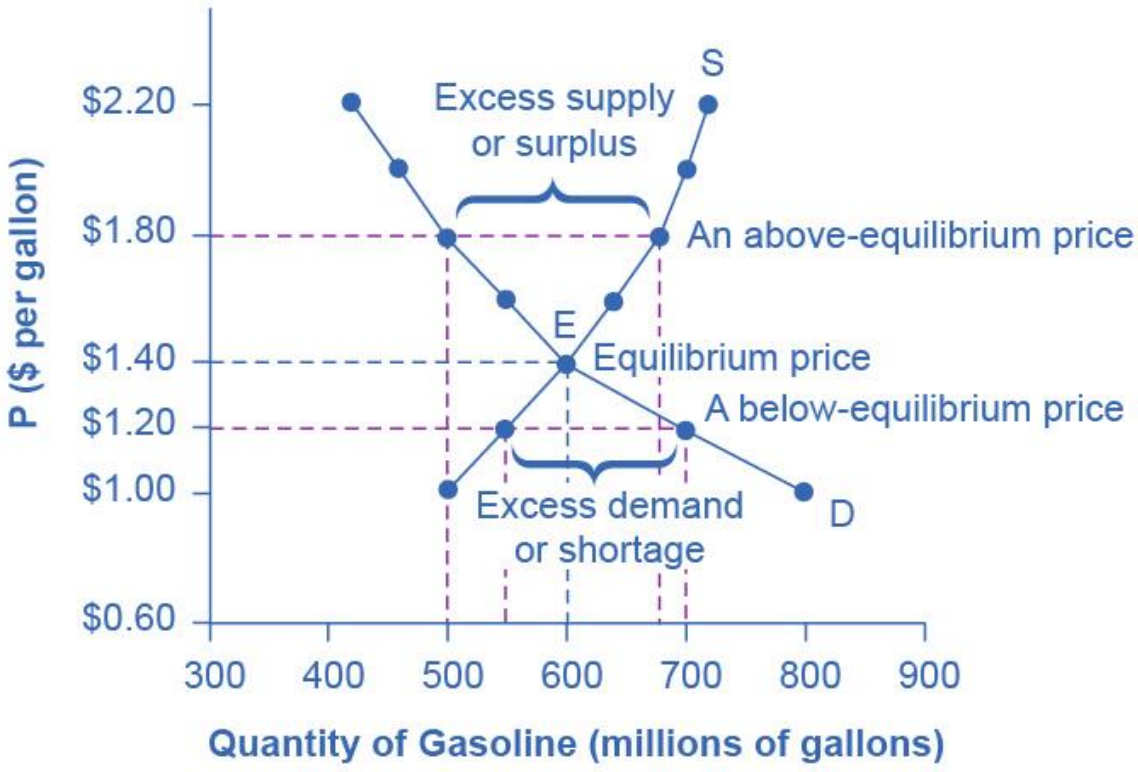
- **Equilibrium price** - the price where quantity demanded is equal to quantity supplied
- **Equilibrium quantity** - the quantity at which quantity demanded and quantity supplied are equal for a certain price level.
- **Surplus** or **excess supply** - at the existing price, quantity supplied exceeds the quantity demanded.
- **Shortage** or **excess demand** - at the existing price, the quantity demanded exceeds the quantity supplied.



Equilibrium - Where Demand and Supply Intersect

- The demand curve (D) and the supply curve (S) intersect at the **equilibrium** point E.
- The equilibrium price is the only price where,

  quantity demanded = quantity supplied
- At a price above equilibrium, quantity supplied > quantity demanded, so there is excess supply.
- At a price below equilibrium, quantity demanded > quantity supplied, so there is excess demand.

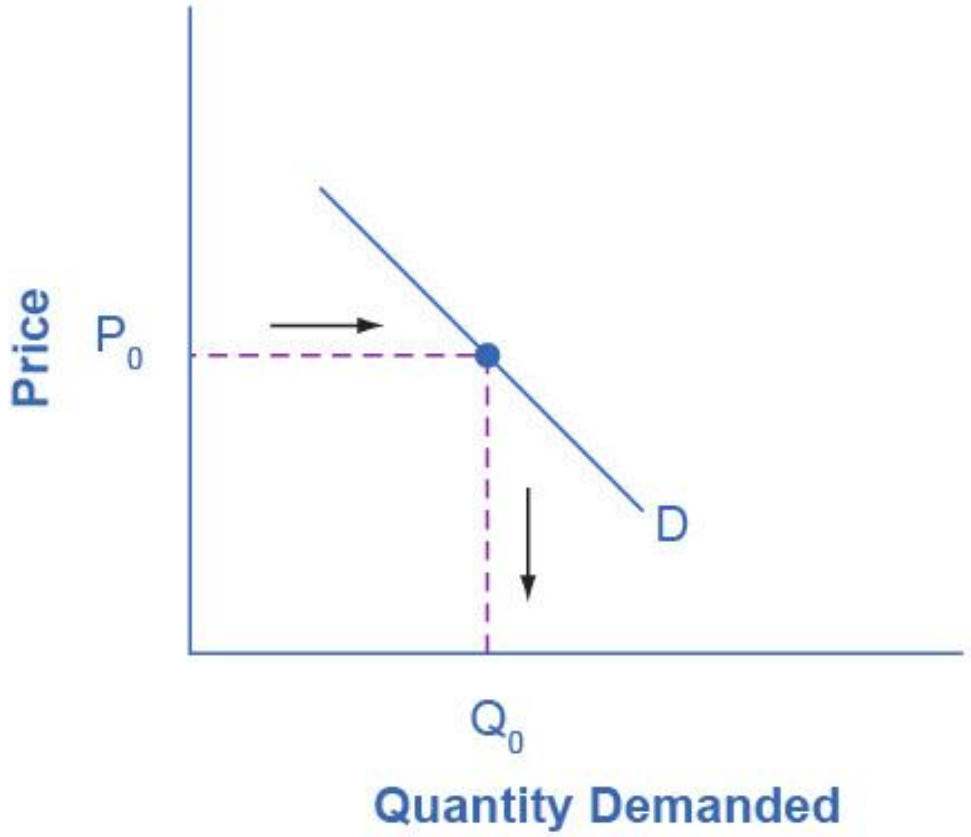


3.2 Shifts in Demand and Supply for Goods and Services

- **Ceteris paribus** - Latin phrase meaning "other things being equal"
- Any given demand or supply curve is based on the ceteris paribus assumption that all else is held equal.

Demand Curve

- The demand curve can be used to identify how much consumers would buy at any given price.



Shifting the Demand Curve

Figure A

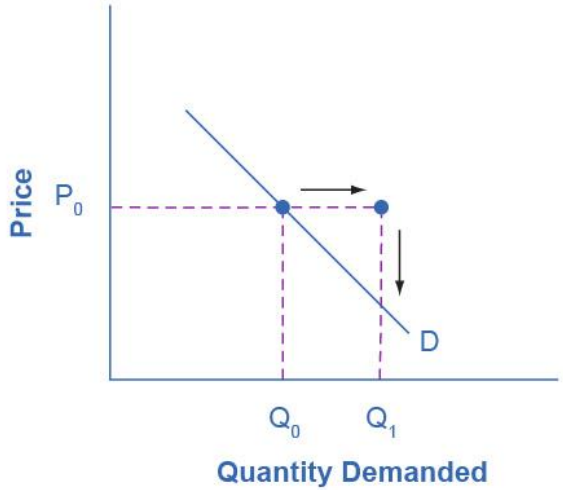
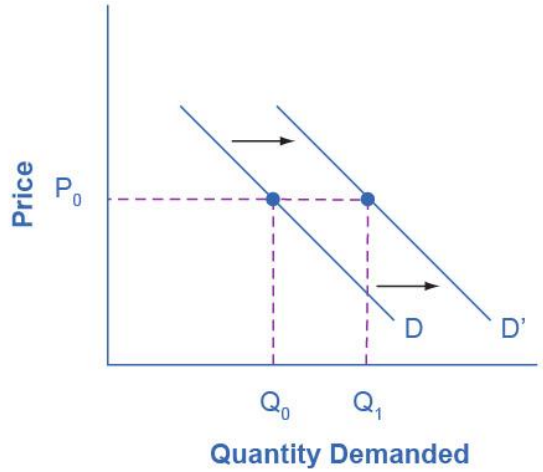


Figure B

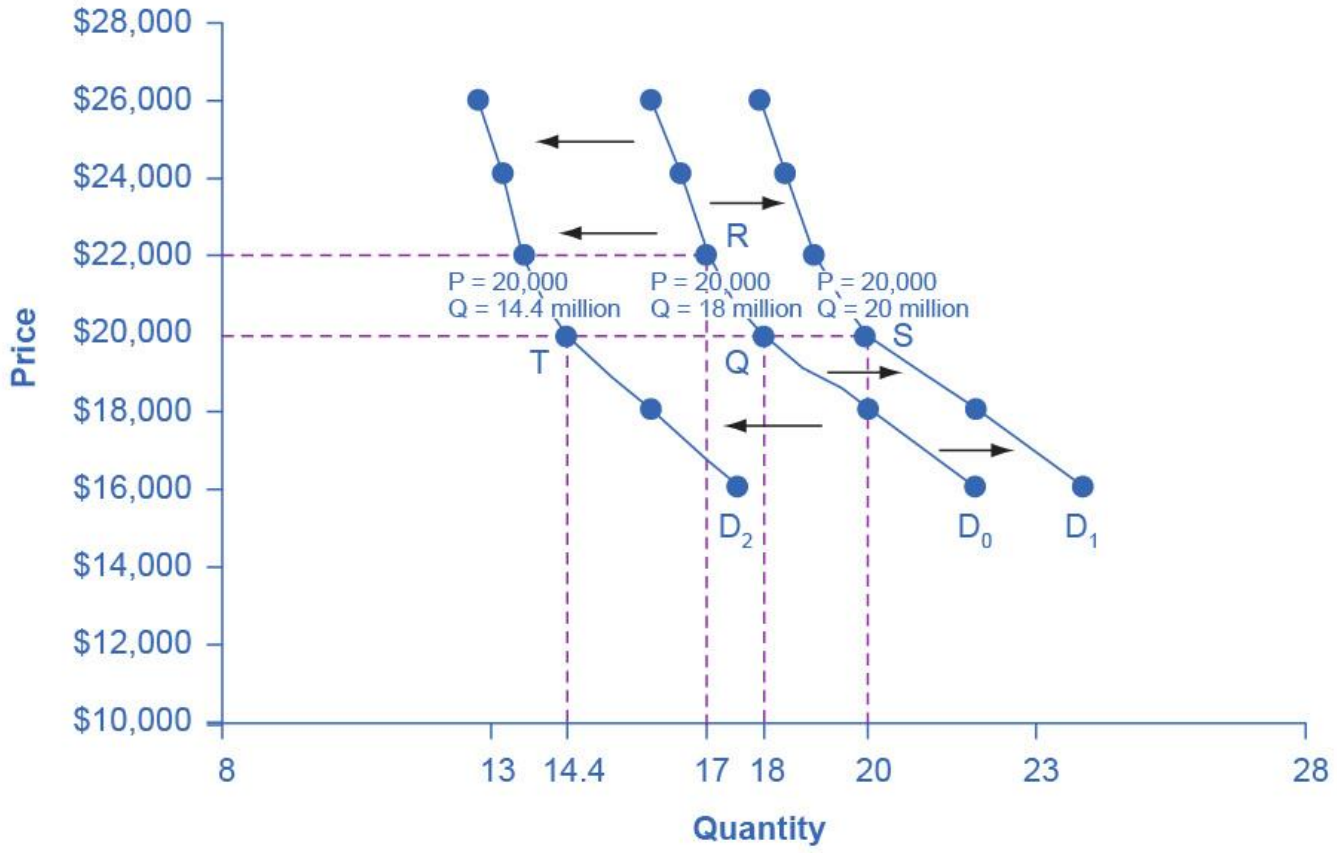


If income increases:

- Consumers will purchase larger quantities, pushing demand to the right (figure A).
- Thus, causing the demand curve to shift right (figure B).

Shifting the Demand Curve

- Increased demand means that at every given price, the quantity demanded is higher, so that the demand curve shifts to the *right* from D_0 to D_1.
- Decreased demand means that at every given price, the quantity demanded is lower, so that the demand curve shifts to the *left* from D_0 to D_2.



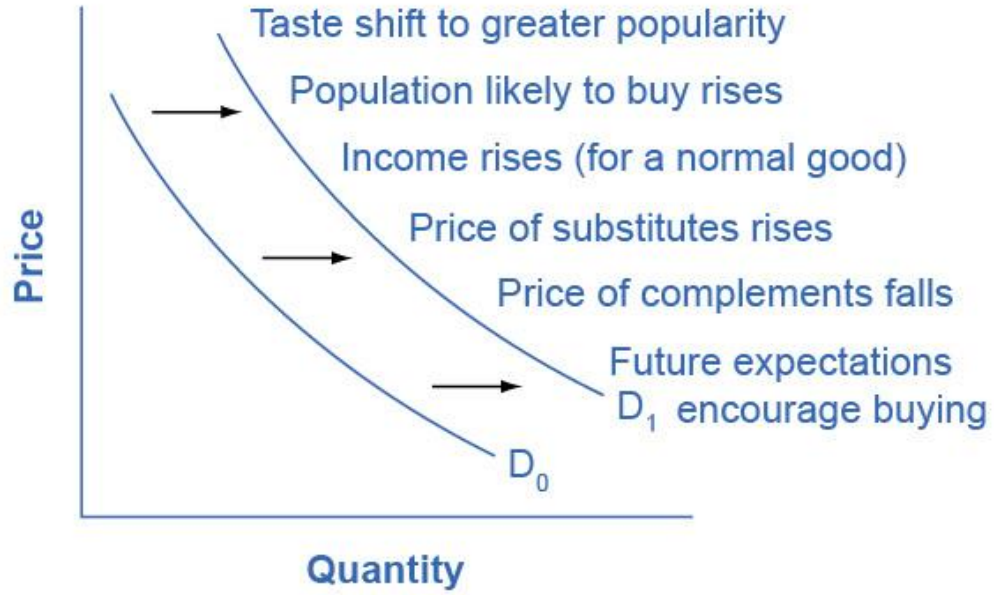
What Factors Affect Demand?

- A **shift in demand** happens when a change in some economic factor (other than price) causes a different quantity to be demanded at every price.

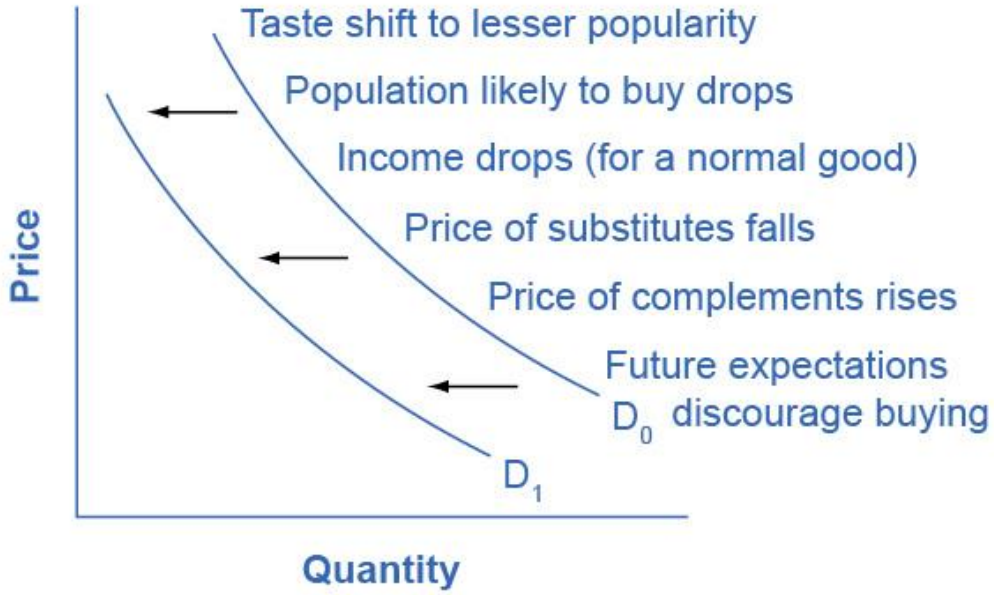
- Factors that affect demand:
  - Income
  - Changing tastes or preferences
  - Changes in the composition of the population
  - Price of substitute or complement changes
  - Changes in expectations about future

How Factors Affect Demand

- (a) A list of factors that can cause an increase in demand from D_0 to D_1.
- (b) The same factors, if their direction is reversed, can cause a decrease in demand from D_0 to D_1.



(a) Factors that increase demand



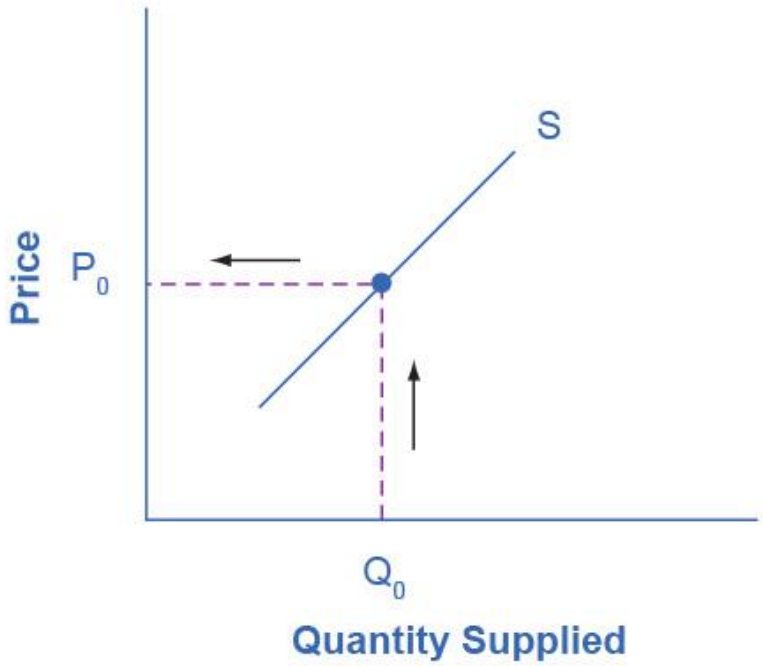
(b) Factors that decrease demand

Types of Goods & Services

- **Normal good** - A product whose demand rises when income rises, and vice versa.
- **Inferior good** - A product whose demand falls when income rises, rises, and vice versa.
- **Substitute** - a good or service that we can use in place of another good or service.
- **Complements** - goods or services that are often used together so that consumption of one good tends to enhance consumption of the other.

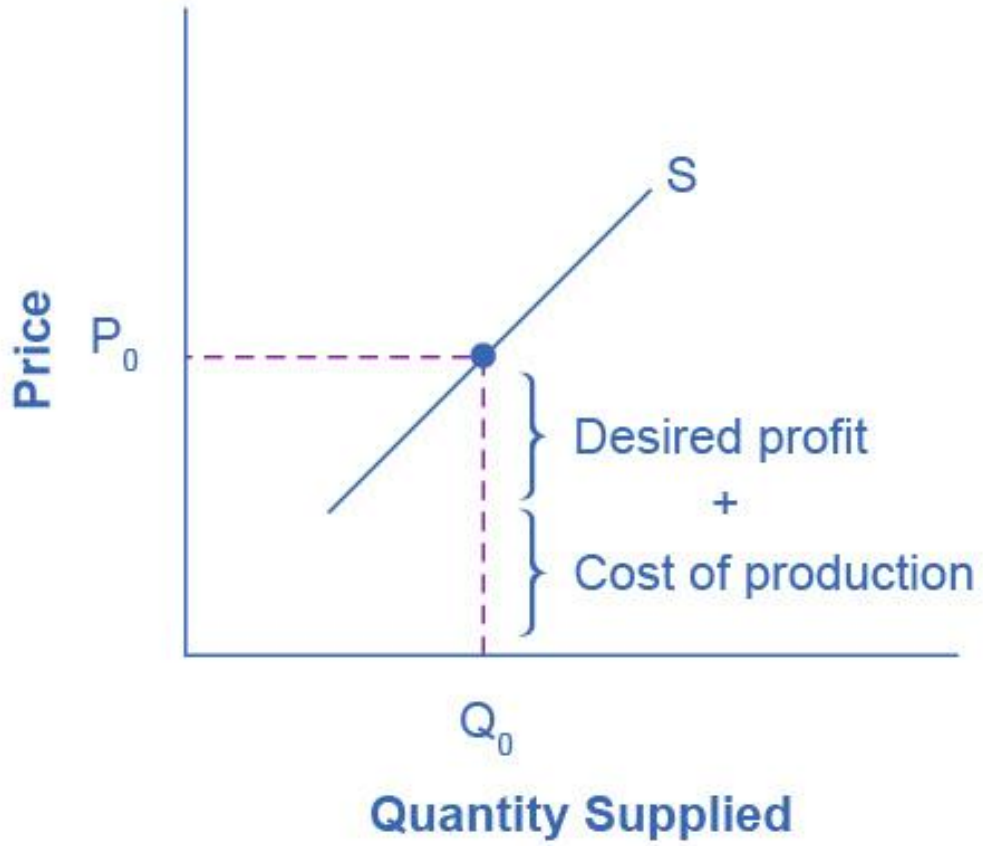
Supply Curve

- The supply curve can be used to show the minimum price a firm will accept to produce a given quantity of output.

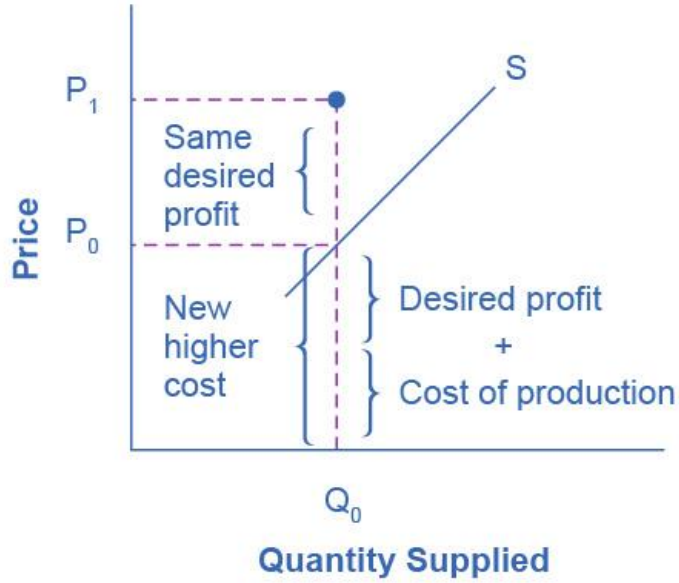


Supply Price

- The cost of production and the desired profit equal the price a firm will set for a product.



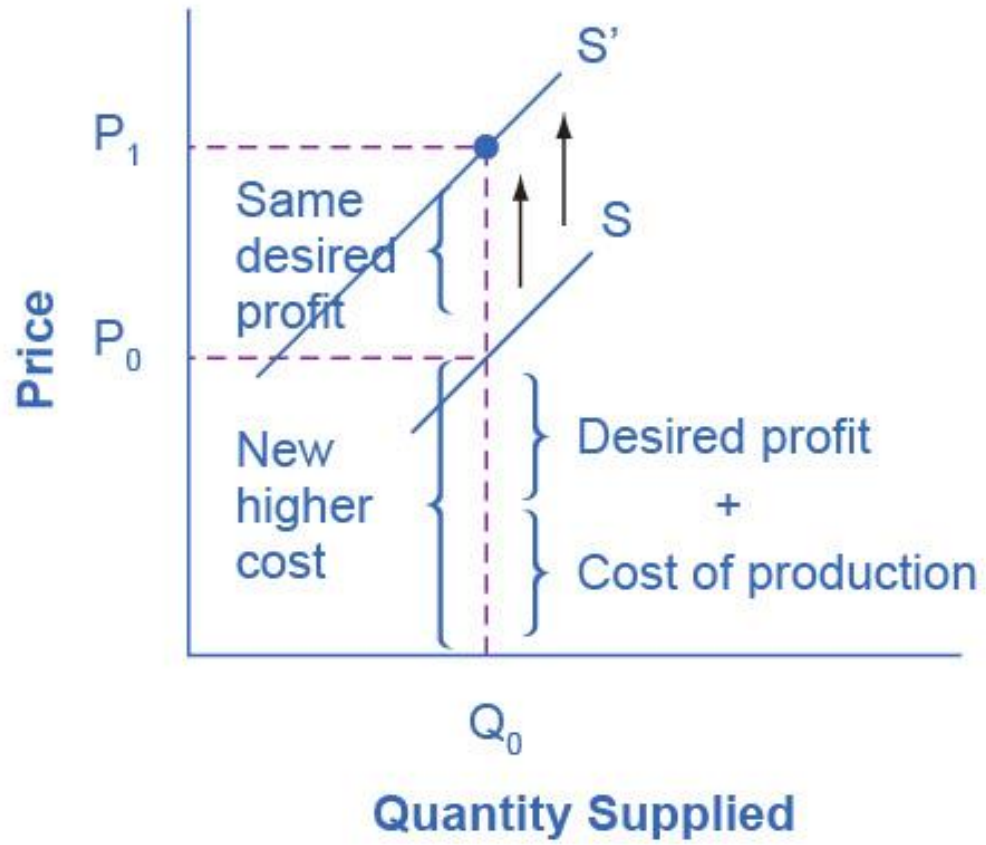
Changing the Price



- Because the cost of production and the desired profit equal the price a firm will set for a product,
  - If the cost of production ⇧ , the price for the product will also need to ⇧.

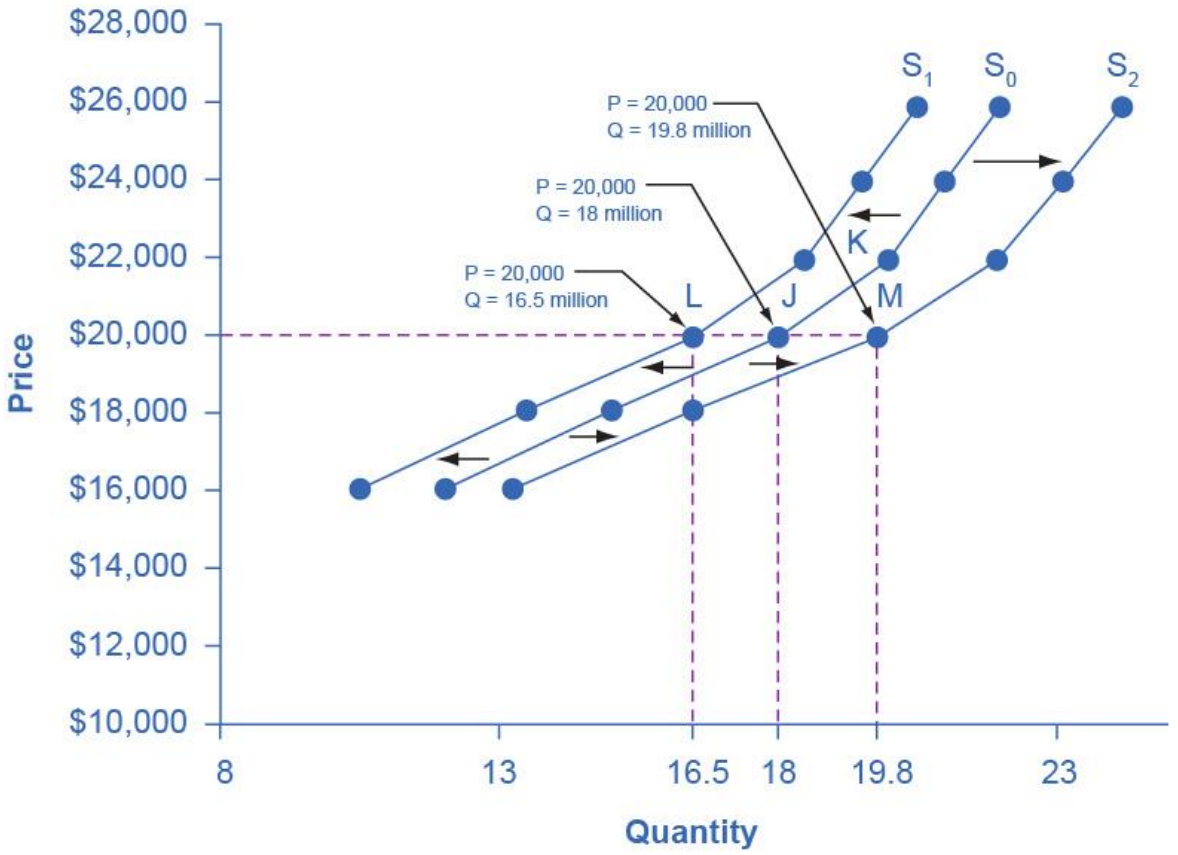
Shifting the Supply Curve

- When the cost of production <u>increases</u>, the supply curve shifts *up* to a new price level.



Shifting the Supply Curve

- Decreased supply means that at every given price, the quantity supplied is lower, so that the supply curve shifts to the *left*, from S_0 to S_1.
- Increased supply means that at every given price, the quantity supplied is higher, so that the supply curve shifts to the *right*, from S_0 to S_2.



What Factors Affect Supply?

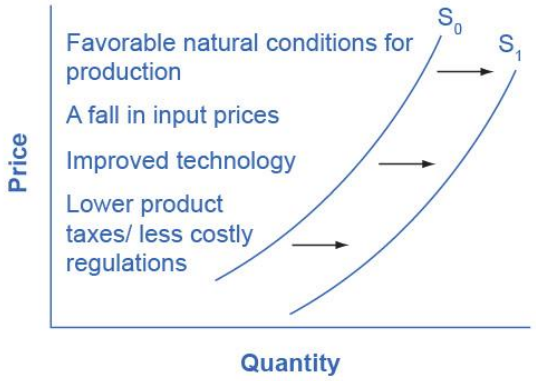
- **Shift in supply** - when a change in some economic factor (other than price) causes a different quantity to be supplied at every price.

- **Inputs** or **factors of production** - the combination of labor, materials, and machinery that is used to produce goods and services.

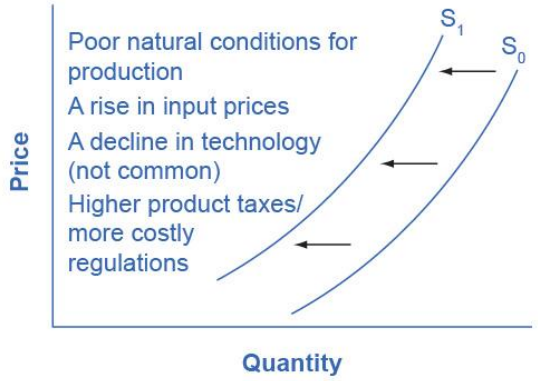
- Factors that affect supply:
  - Natural conditions
  - Input prices
  - Technology
  - Government policies

How Factors Affect Supply

- (a) A list of factors that can cause an increase in supply from S_0 to S_1.
- (b) The same factors, if their direction is reversed, can cause a decrease in supply from S_0 to S_1.



(a) Factors that increase supply



(b) Factors that decrease supply

3.3 Changes in Equilibrium Price and Quantity: The Four-Step Process

- Four-step process to determining how an economic event affects *equilibrium price* and *quantity*:

- Step 1. Draw a demand and supply model before the economic change took place.

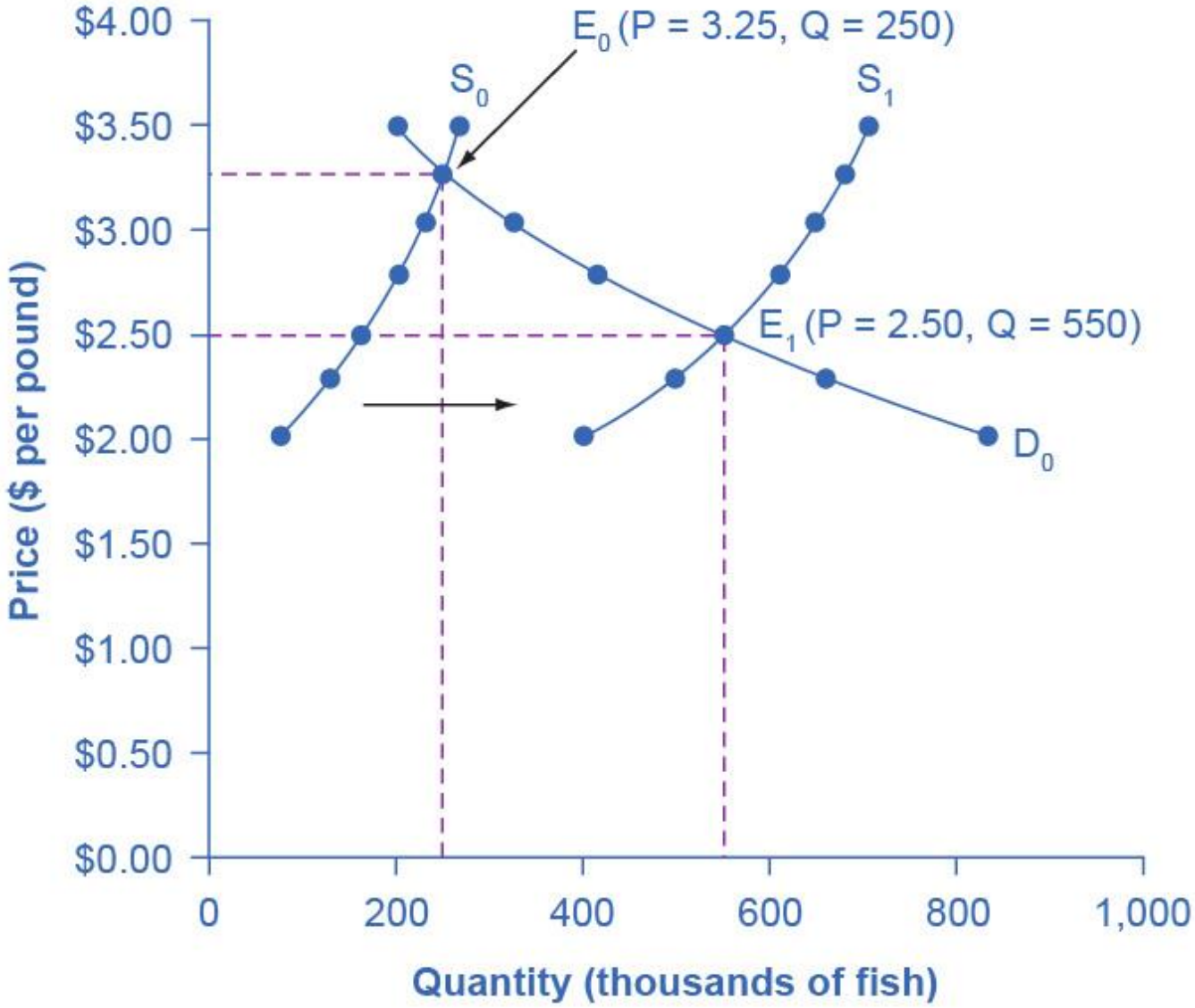
- Step 2. Decide whether the economic change affects demand or supply.

- Step 3. Decide whether the effect causes a curve shift to the right or to the left, and sketch the new curve on the diagram.

- Step 4. Identify the new equilibrium and then compare to the original.

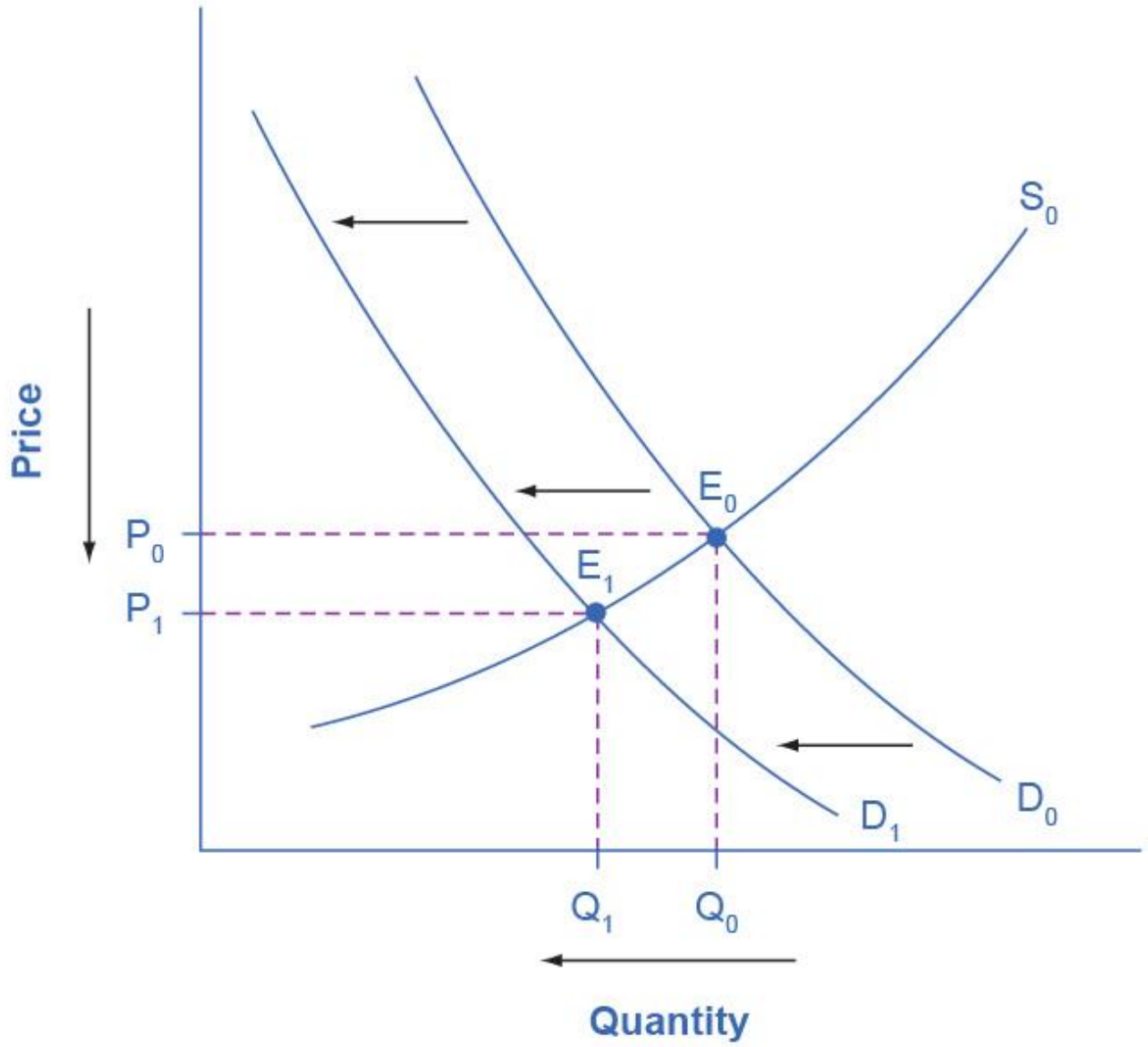
Example: Shift in Supply

- **Discussion Question**: Using the 4-step approach, how did excellent weather conditions during the summer affect the quantity and price of salmon?



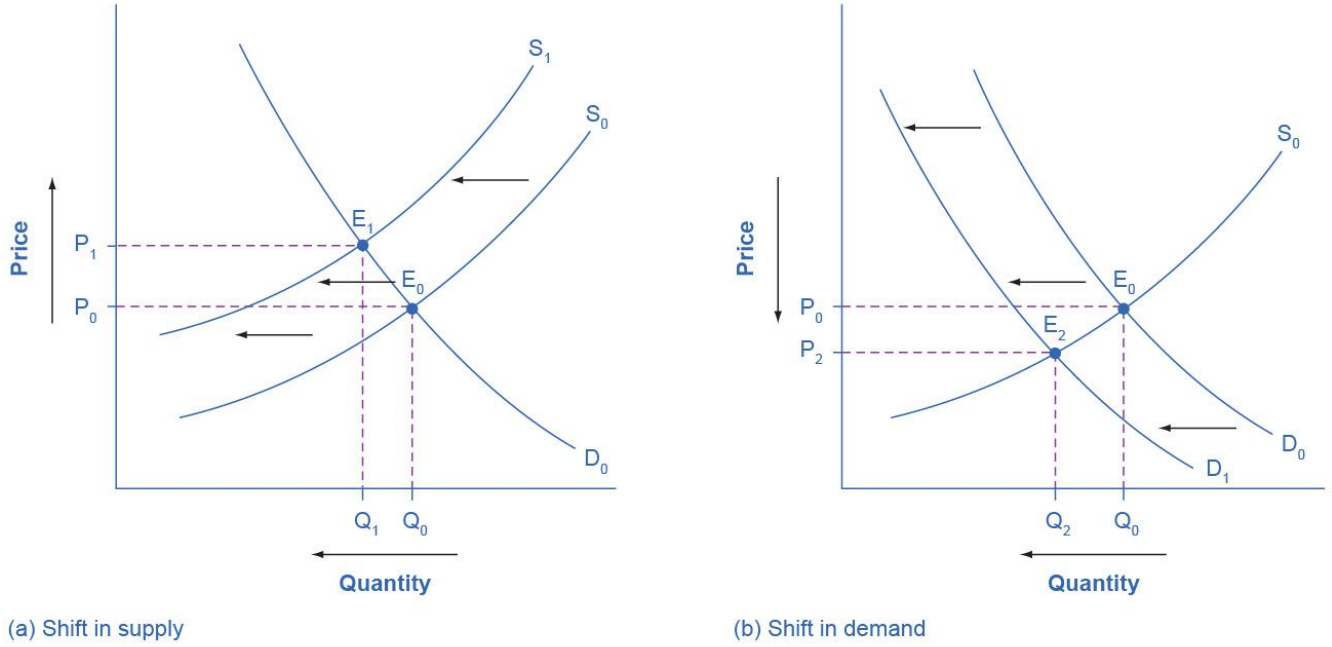
Example: Shift in Demand

- **Discussion Question**: From 2004 to 2012, the share of Americans who reported obtaining their news from digital sources increased from 24% to 39%. Using the 4-step approach, how has this affected the consumption of traditional sources, such as print news media, and radio and television news?



A Combined Example

- **Discussion Question**: Using the 4-step approach, what does an increase in labor compensation, as well as an increase in digital communication suggest about the continued viability of the Postal Service?

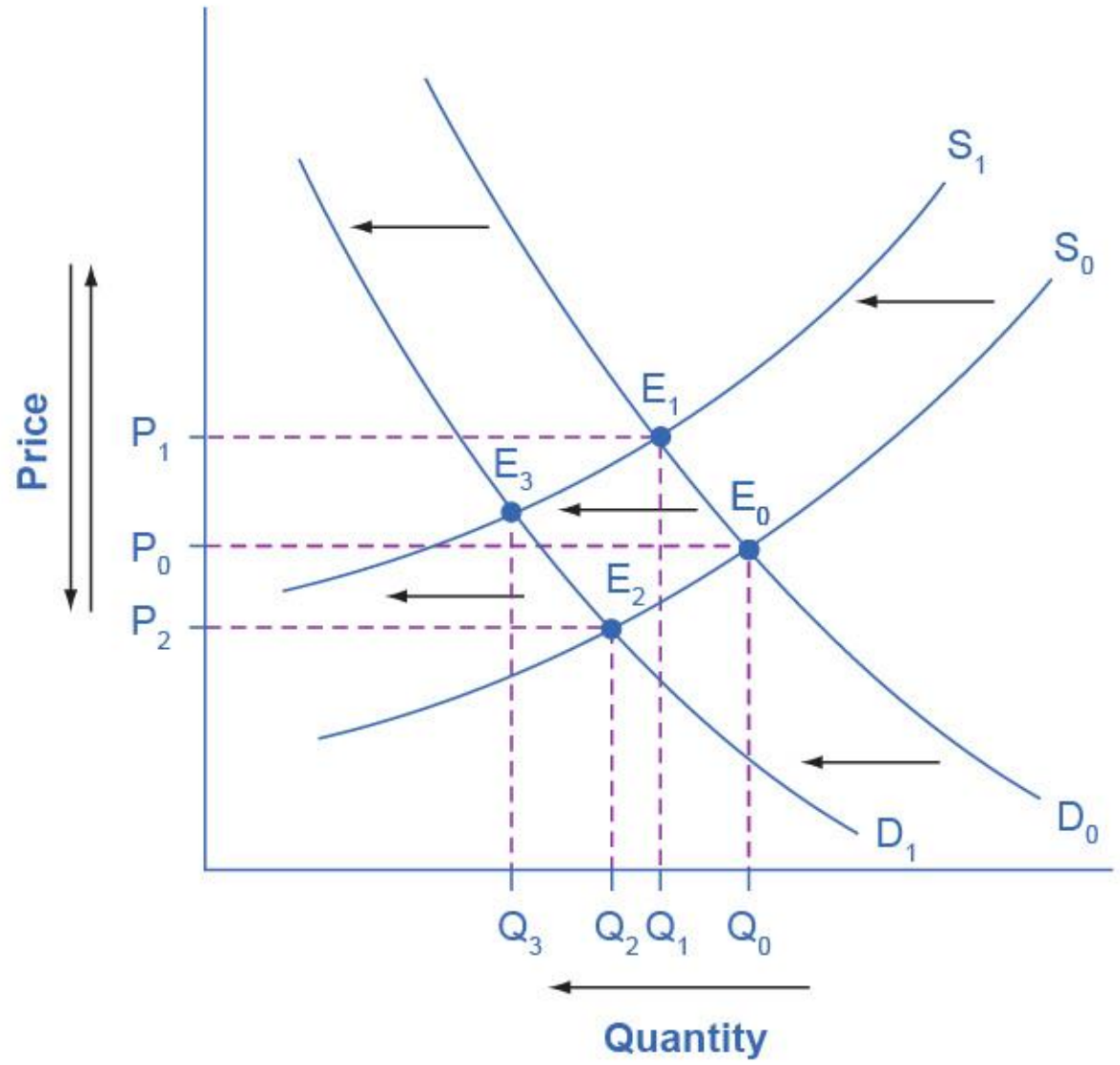


(a) Higher labor compensation causes a leftward shift in the supply curve, a decrease in the equilibrium quantity, and an increase in the equilibrium price.

(b) A change in tastes away from Postal Services causes a leftward shift in the demand curve, a decrease in the equilibrium quantity, and a decrease in the equilibrium price.

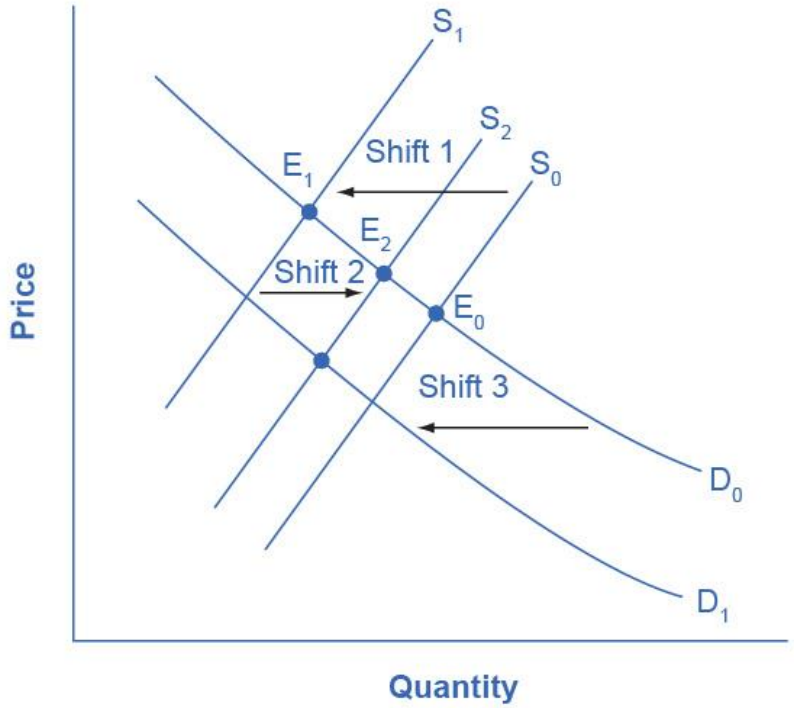
A Combined Example

- Superimposing the previous two diagrams one on top of the other, we see that supply and demand shifts cause changes in equilibrium price and quantity.



Movements vs. Shifts

- Movements are different than shifts.



- A shift in one curve never causes a shift in the other curve. Rather, a shift in one curve causes a movement along the second curve.

Credits: Greenlaw, S. A., Shapiro, D., & MacDonald, D. (2022). *Principles of economics* (3rd ed.). OpenStax. https://openstax.org/books/principles-economics-3e