3.1 Markets

What is a market?

- a ***marke***t is the process of buyers and sellers exchanging goods services.
- can be local, national, or global.
- Examples
  - supermarkets
  - Toronto Stock Exchange
  - garage sales
  - internet stores

3.1 Markets

What are the roles of buyers and sellers in a market?

- Buyers
  - determine the demand side of the market.
  - consumers purchasing goods
  - firms purchasing inputs
- Sellers
  - determine the supply side of the market.
  - firms selling goods
  - resource owners selling inputs.

3.1 Markets

What are the roles of buyers and sellers in a market?

- a competitive market is a market where the many buyers and sellers have very little market power
- each buyer’s and seller’s effect on market price is negligible.

3.1 Markets

Section Check

- Markets consist of buyers and sellers exchanging goods and services with one another.
- Buyers determine the demand side of the market and sellers determine the supply side of the market.

3.2 Demand

What is the law of demand?

- the quantity of a good or service demanded varies inversely with its price, ceteris paribus.
- as price (P) increases, quantity demanded (QD) decreases (and vice versa).

$$\mathbf{P}\downarrow \quad \mathbf{Q_D}\uparrow$$

$$\boxed{P\uparrow \Rightarrow Q_D\downarrow \text{ and } P\downarrow \Rightarrow Q_D\uparrow}$$

3.2 Demand

What is the law of demand?

- Reasons for Law of Demand
  - *substitution effect*: at higher prices, buyers increasingly substitute other goods for the good that now has a higher relative price.
  - *income effect*: at higher prices, buyers feel poorer, causing lower quantity demanded.

3.2 Demand

What is an individual demand schedule and curve?

- What if the price of water increases significantly?
  - at the higher price, consumers will still use it for essentials.
  - may no longer water the lawn, take long showers, etc.

3.2 Demand

What is an individual demand schedule and curve?

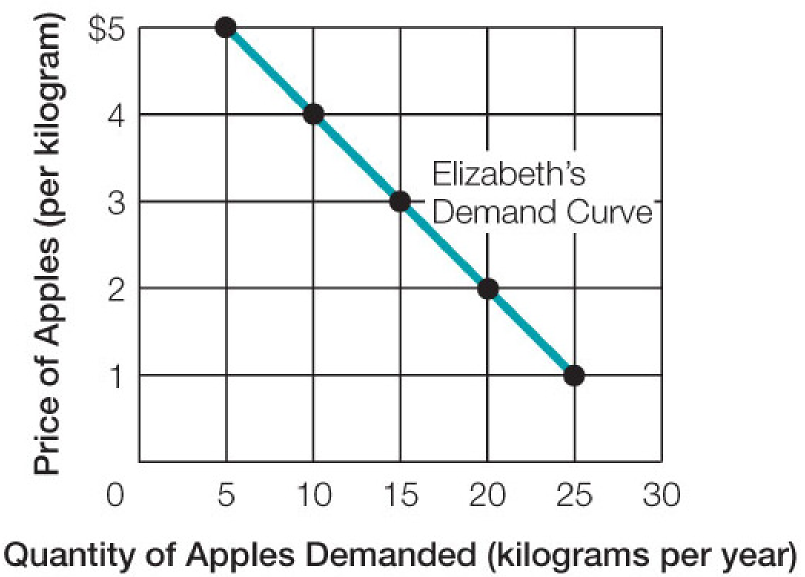
- An individual *demand schedule* shows the amounts of a good a person would be willing and able to buy at various prices.

Price (per kilogram)	Quantity Demanded (kilograms per year)
$5	5
4	10
3	15
2	20
1	25

3.2 Demand

What is an individual demand schedule and curve?

- The dots represent various quantities of apples that Elizabeth would be willing and able to buy at different prices in a given time period.
- The demand curve shows how the quantity demanded varies inversely with the price of the good when we hold everything else constant—*ceteris paribus*.



3.2 Demand

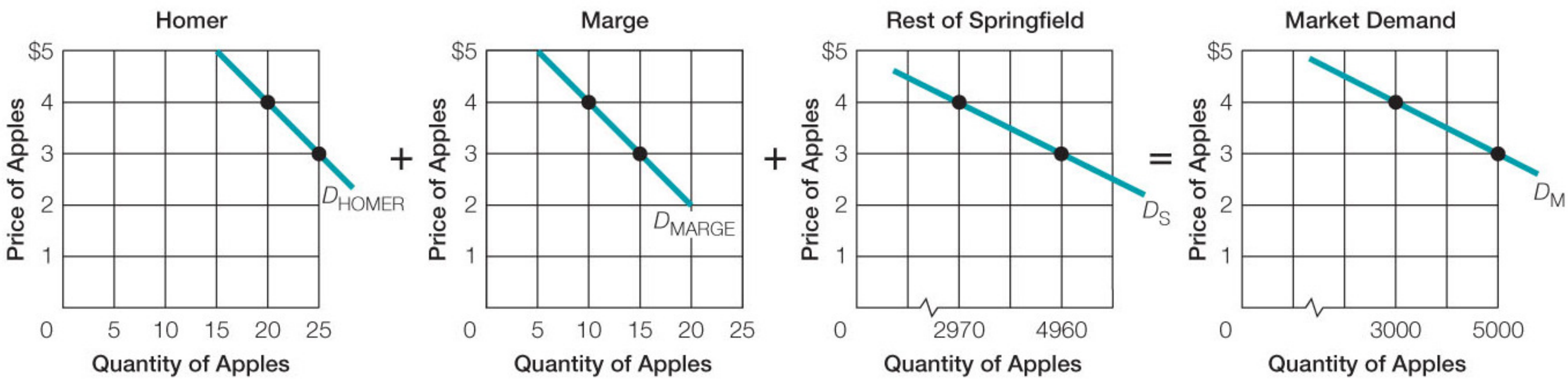
What is an individual demand schedule and curve?

- An individual *demand curve* is a graphical representation of the relationship between price and quantity demanded.

3.2 Demand

What is a market demand curve?

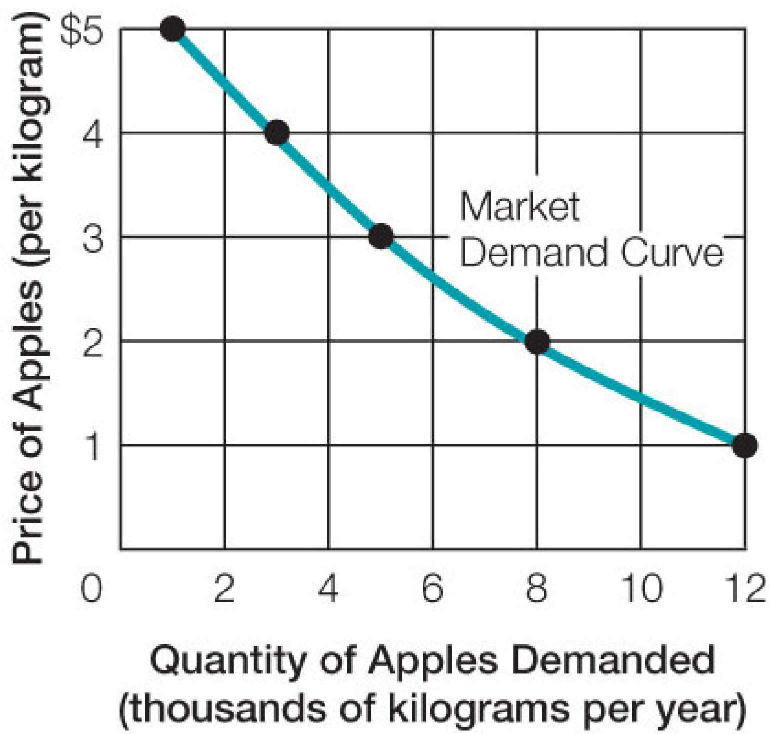
- a market demand curve horizontally sums up the demand curves of many individuals.



3.2 Demand

What is a market demand curve?

- a market demand curve horizontally sums up the demand curves of many individuals.



3.2 Demand

What is an individual demand schedule and curve?

- Money Price
  - the money price is the price of a good expressed in dollars and cents.
  - also called absolute or nominal price.
- Relative Price
  - is the price of one good relative to other goods.
  - relative price is crucial to most economic decisions.

3.2 Demand

What is an individual demand schedule and curve?

- Money v. Relative Price
  - money prices tend to rise over time.
  - relative prices can go up or down.
  - example:
    - car prices have increased steadily in money terms, but have not changed much relative to other goods.

3.2 Demand

Section Check

- The law of demand states that when the price of a good falls (rises), the quantity demanded rises (falls), ceteris paribus.
- An individual demand curve is a graphical representation of the relationship between the price and the quantity demanded.
- The market demand curve shows the amount of a good that all the buyers in the market would be willing and able to buy at various prices.

3.3 Shifts in the Demand Curve

What is the difference between a change in demand and a change in quantity demanded?

- Change in Quantity Demanded
  - caused by a change in the price of the good.
  - results in a move to a new quantity demanded, *along* the existing demand curve.

3.3 Shifts in the Demand Curve

What is the difference between a change in demand and a change in quantity demanded?

- Change in Demand
  - caused by a change in an underlying, non-price factor.
  - shifts the entire demand curve to a new position.

3.3 Shifts in the Demand Curve

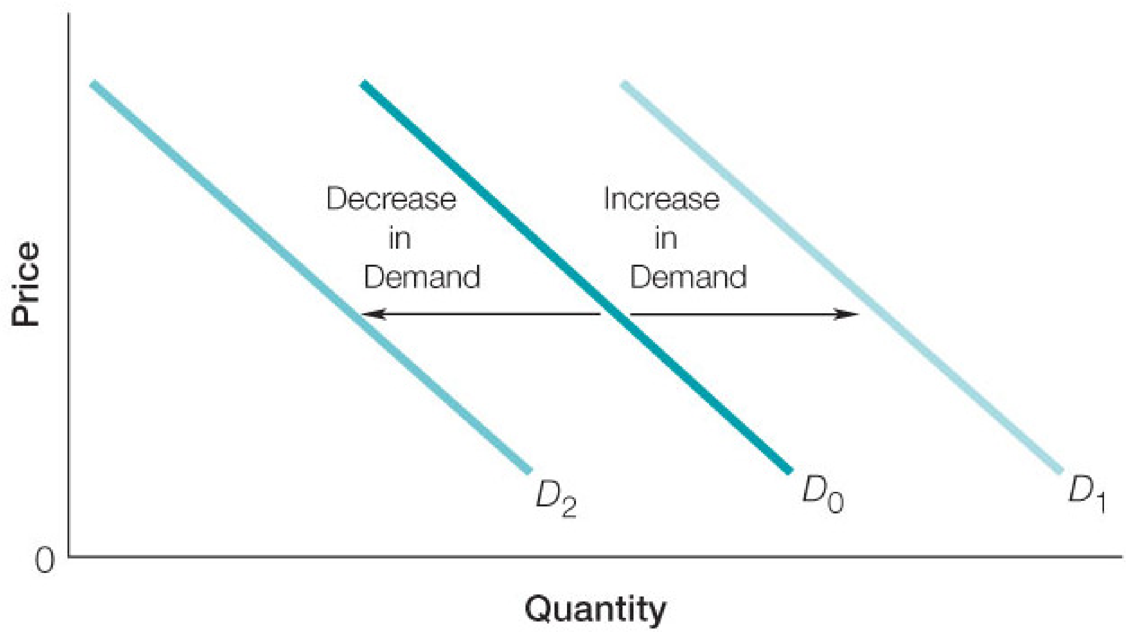
What is the difference between a change in demand and a change in quantity demanded?

- Increase in Demand:
  - represented by a rightward shift in the demand curve.
- Decrease in Demand:
  - represented by a leftward shift in the demand curve.

3.3 Shifts in the Demand Curve

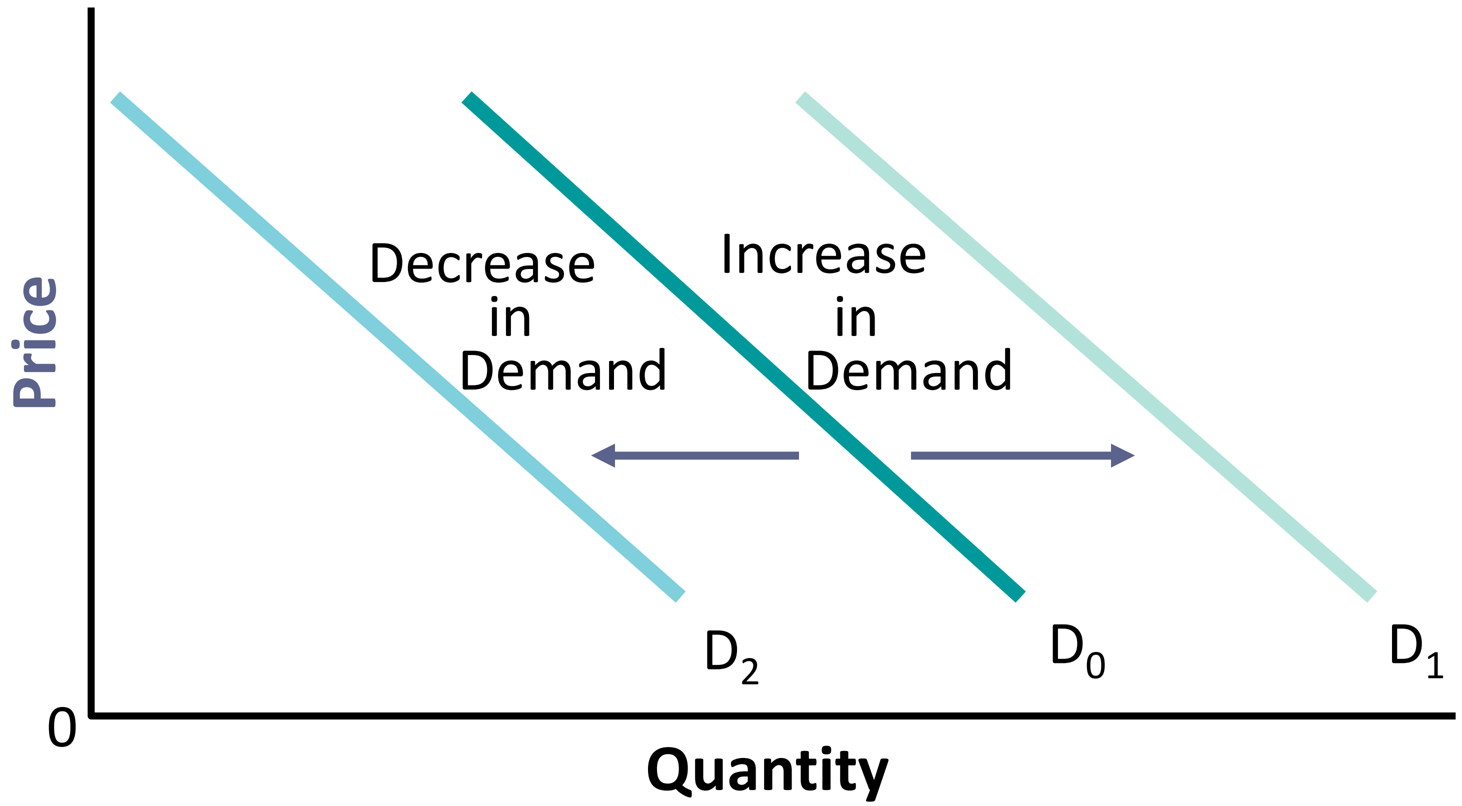
What is the difference between a change in demand and a change in quantity demanded?

- An *increase* in demand shifts the demand curve to the *right*. A *decrease* in demand shifts the demand curve to the *left*.



3.3 Shifts in the Demand Curve

Exhibit 1: Demand Shifts



3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Determinants of Demand:
  - prices of related goods
  - buyers' incomes
  - number of buyers (population)
  - buyers' tastes
  - buyers' expectations

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Prices of Related Goods
  - Substitutes:
  - goods that are consumed in place of each other (e.g. Sprite and 7Up).
  - some substitutes are better than others.
  - because tastes differ, substitutes for one person may not be so for another person.

3.3 Shifts in the Demand Curve

What are the determinants of demand?

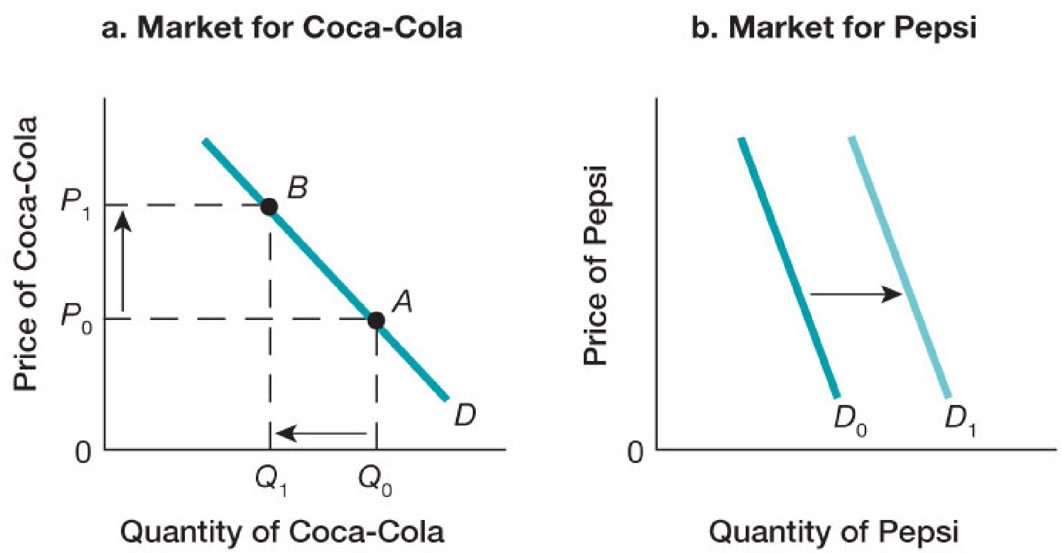
- Prices of Related Goods
  - two goods are *substitutes* if an increase (decrease) in the price of one causes an increase (decrease) in the demand for the other.

$$P_{\text{GOOD A}} \uparrow \Rightarrow \uparrow D_{\text{GOOD B}}$$
$$P_{\text{GOOD A}} \downarrow \Rightarrow \downarrow D_{\text{GOOD B}}$$

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- In Exhibit 2(a), we see that as the price of Coca-Cola increased—a movement up along your demand curve for it—you increased your demand for Pepsi, resulting in a shift in the demand for Pepsi (Exhibit 2[b]).



3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Prices of Related Goods
  - two goods are complements if they are consumed or used together (e.g. tennis racquets and tennis balls)

3.3 Shifts in the Demand Curve

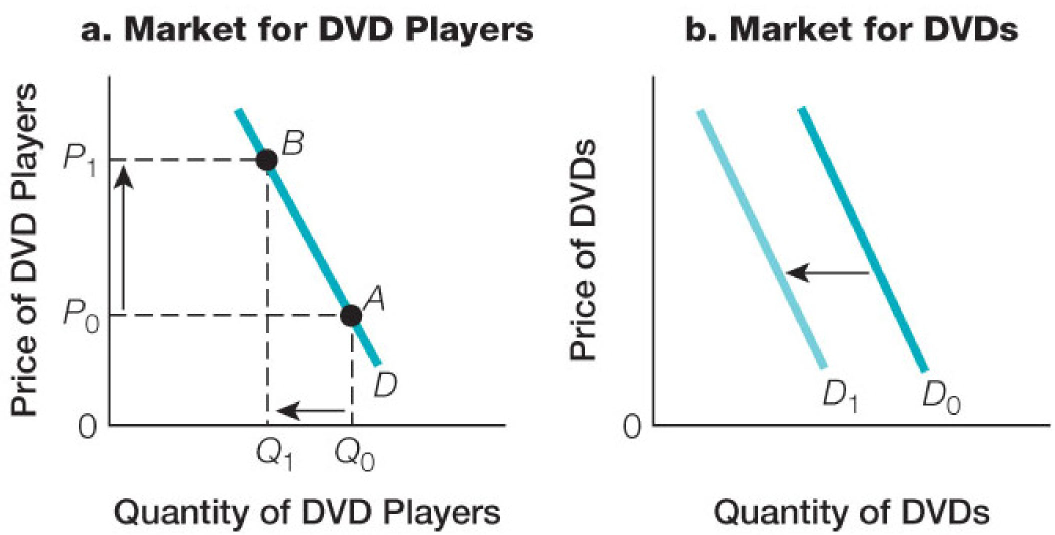
What are the determinants of demand?

- Prices of Related Goods
  - two goods are complements if an increase (decrease) in the price of one causes an decrease (increase) in the demand for the other.

$$P_{\text{GOOD A}} \uparrow \Rightarrow \downarrow D_{\text{GOOD B}}$$
$$P_{\text{GOOD A}} \downarrow \Rightarrow \uparrow D_{\text{GOOD B}}$$

3.3 Shifts in the Demand Curve

- In Exhibit 3(a), we see that as the price of DVD Players increases, the quantity demanded of DVD players falls—a movement up along your demand curve. And with fewer DVD players being purchased, we could expect people to decrease their demand (a leftward shift) for DVDs (Exhibit 3[b]).



3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Buyers' Incomes
  - generally consumption is positively related to income.
  - as individuals receive more income, they increase their consumption of most goods and services.

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Buyers' Incomes
  - a good is a normal good if an increase (decrease) in buyers' incomes causes an increase (decrease) in demand for that good.

$$\text{Income} \uparrow \Rightarrow \text{Demand} \uparrow$$

$$\text{Income} \downarrow \Rightarrow \text{Demand} \downarrow$$

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Buyers' Incomes
  - for inferior goods, an increase (or decrease) in income leads to a decrease (or increase) in demand (e.g. macaroni and cheese)

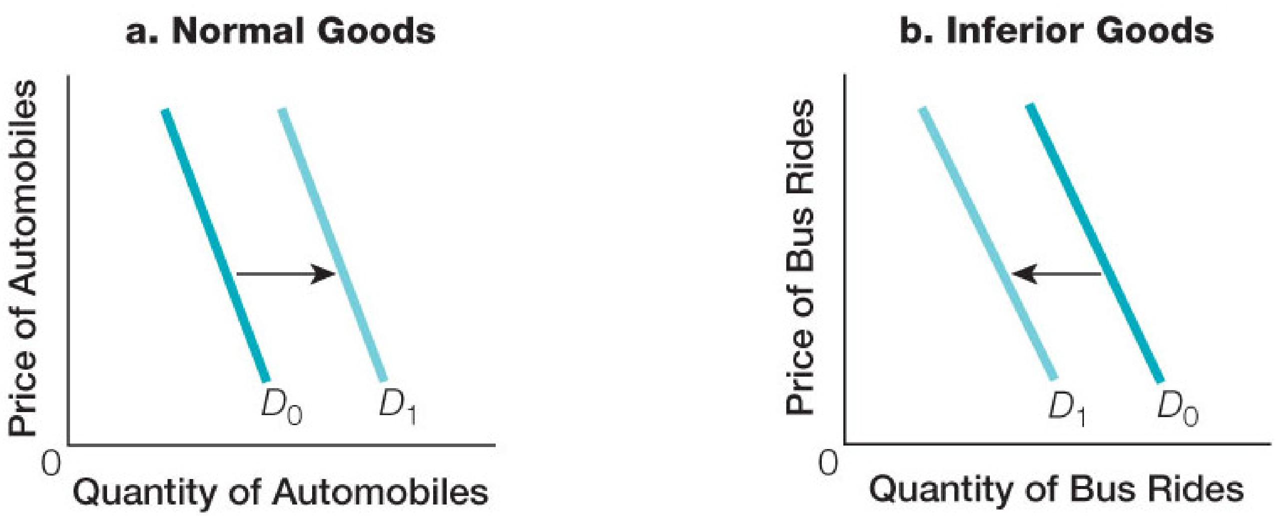
$$\text{Income} \uparrow \Rightarrow \text{Demand} \downarrow$$

$$\text{Income} \downarrow \Rightarrow \text{Demand} \uparrow$$

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Automobiles are generally considered a normal good, so a rise in income will increase the demand for automobiles (Exhibit 4[a]). However, the demand for bus rides may fall, as higher incomes allow consumers to buy automobiles. The demand for bus rides would then be an inferior good (Exhibit 4[b]).



3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Number of Buyers
  - an increase (decrease) in the potential consumer population will increase (decrease) demand for a good or service.

- Buyers' Tastes
  - A change in fashion or consumer preferences will shift demand for a good or service.

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Buyers' Expectations
  - an expected increase in the price of a good will increase (shift right) current demand for it.
  - an expected decrease in the future availability of a good will increase (shift right) current demand for it.

3.3 Shifts in the Demand Curve

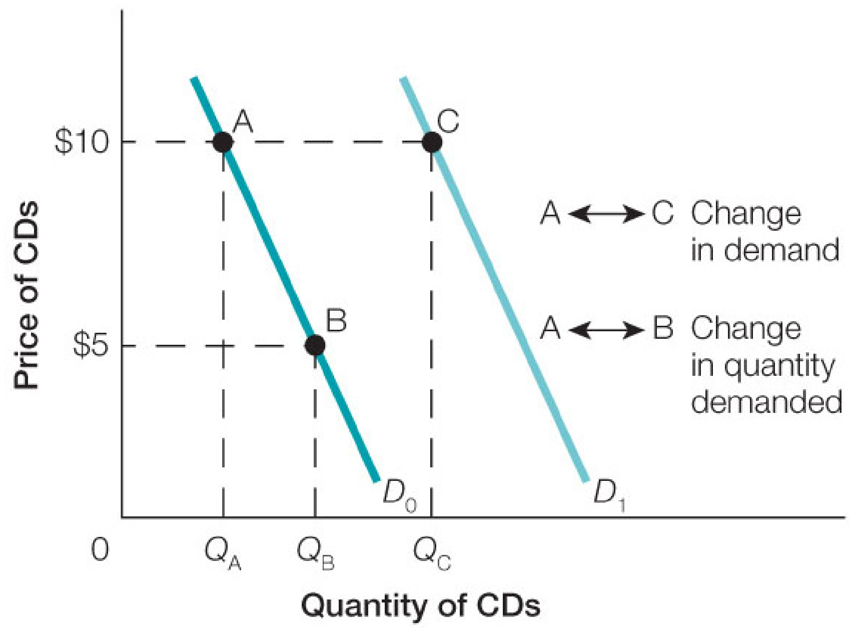
What are the determinants of demand?

- Demand versus Quantity Demanded:
  - a change in price leads to a change in quantity demanded.
  - a change in an underlying factor (or determinant of demand) leads to a change in demand.

3.3 Shifts in the Demand Curve

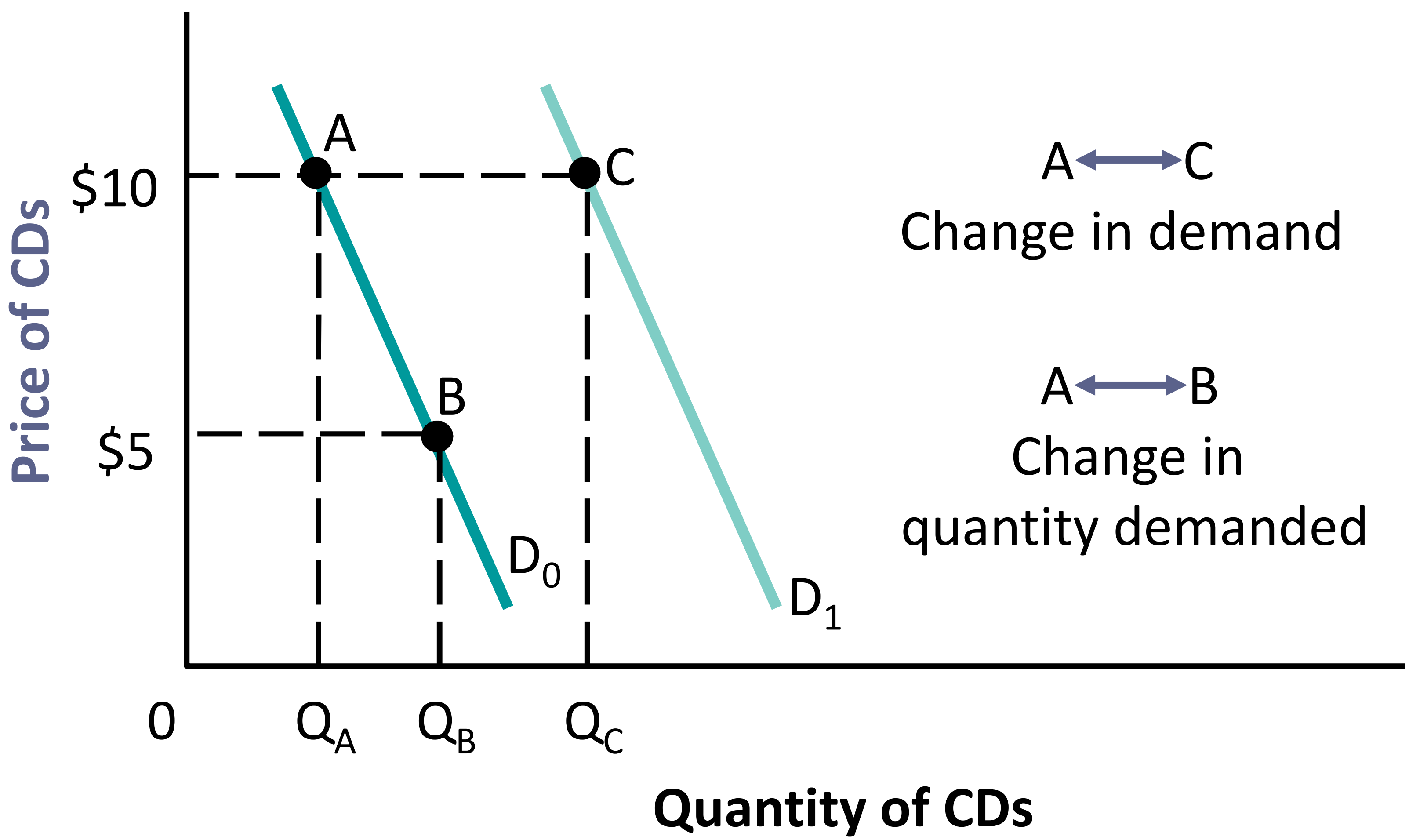
What are the determinants of demand?

- As indicated earlier, if the price of a good changes, we say that this leads to a *"change in quantity demanded."* In Exhibit 5, the movement from A to B is called an *increase in quantity demanded,* and the movement from B to A is called a *decrease in quantity demanded.*



3.3 Shifts in the Demand Curve

What are the determinants of demand?



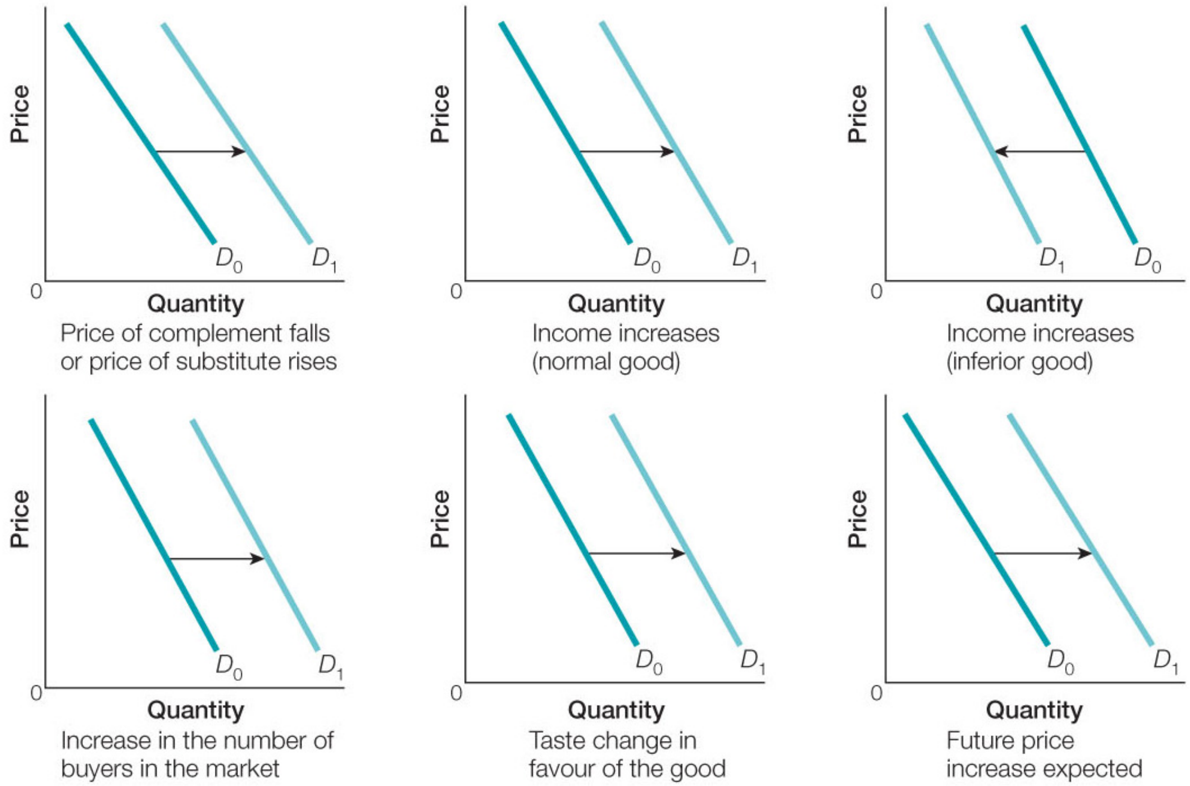
A ⟷ C
Change in demand

A ⟷ B
Change in
quantity demanded

3.3 Shifts in the Demand Curve

What are the determinants of demand?

- Summary of the Demand Shifters



3.3 Shifts of the Demand Curve

Section Check

- A change in the quantity demanded describes a movement along a given demand curve in response to a change in the price of the good. A change in demand shifts the entire demand curve in response to a change in some determinant of demand.
- Some possible determinants of demand (demand shifters) are the prices or related goods, income, number of buyers, tastes, and expectations.
- The price of a substitute is positively related to the demand curve for the good in question;

3.3 Shifts of the Demand Curve

Section Check

- the price of a complement is inversely related to the demand curve for the good in question;
- for *normal goods*, income is positively related to the demand curve for the good in question;
- for *inferior goods*, income is inversely related to the demand curve for the good in question;
- the demand curve will vary according to the number of consumers in the market;
- taste changes will shift the demand curve; and,
- changes in expected future prices and income can shift the current demand curve.

3.4 Supply

What is the law of supply?

- the quantity of a good or service supplied varies directly with its price, ceteris paribus.
- as price increases, quantity supplied increases (and vice versa).

$$P \uparrow \quad Q_S \uparrow$$

$$\boxed{P\uparrow \Rightarrow Q_S\uparrow \text{ and } P\downarrow \Rightarrow Q_S\downarrow}$$

3.4 Supply

What is the law of supply?

- the higher the price per unit, the greater the profitability of supplying that good or service.
- also, costs rise as more units are produced; producers must receive a higher price to compensate.

3.4 Supply

What is an individual supply curve?

- an individual supply schedule shows the amounts of a good a producer would be willing and able to supply at various prices.

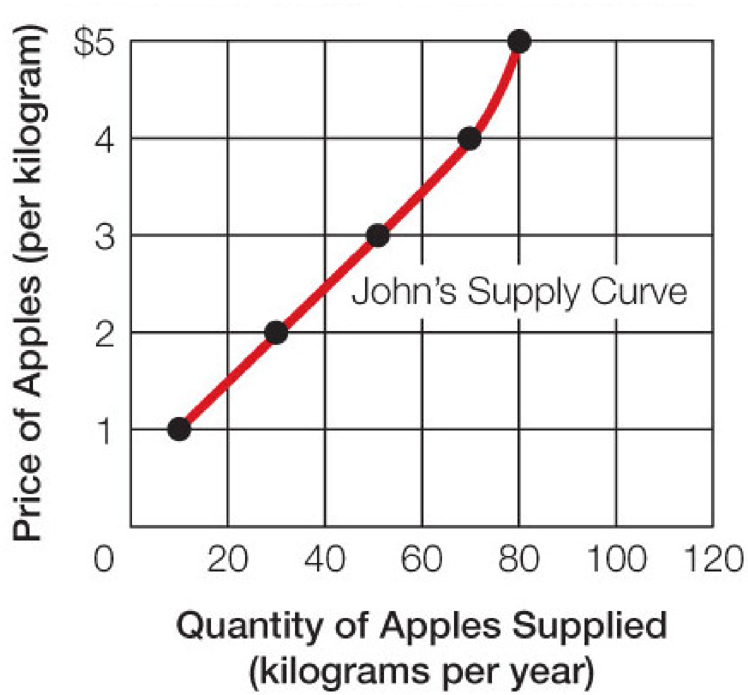
a. John's Supply Schedule for Apples

Price (per kilogram)	Quantity Supplied (kilograms per year)
$5	80
4	70
3	50
2	30
1	10

3.4 Supply

What is an individual supply curve?

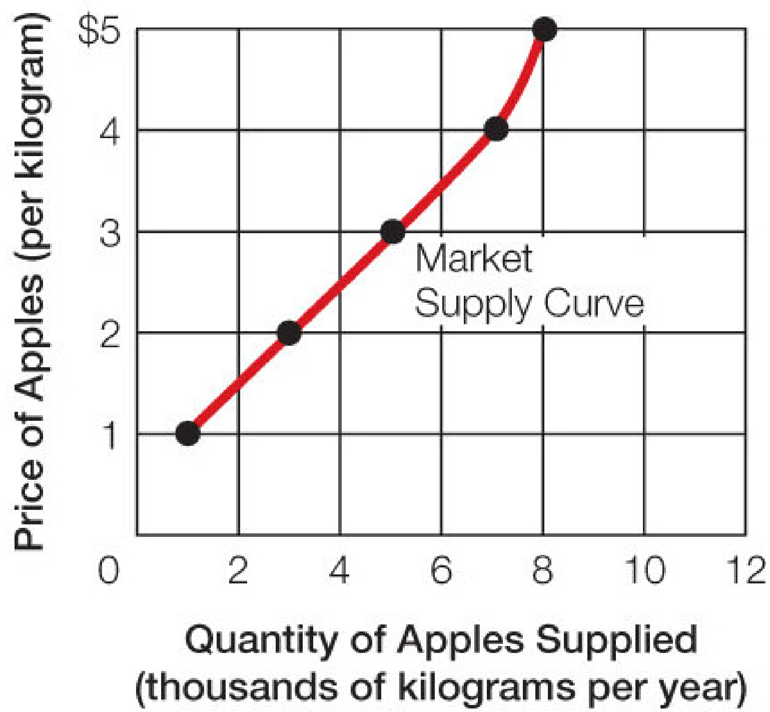
- an individual supply curve is a graphical representation of the relationship between price and quantity supplied.



3.4 Supply

What is a market supply curve?

- a market supply curve horizontally sums up the supply curves of many producers.



3.4 Supply

Section Check

- The law of supply states that the higher (lower) the price of the good, the greater (smaller) the quantity supplied, ceteris paribus..
- The individual supply schedule and curve show the positive relationship between the price and quantity supplied of a given good or service.
- The market supply curve is a graphical representation of the amount of goods and services that suppliers are willing and able to supply at various prices.

3.5 Shifts in the Supply Curve

What is the difference between a change in supply and a change in quantity supplied?

- Change in Quantity Supplied
  - caused by a change in the price of the good.
  - results in a move to a new quantity supplied, along the existing supply curve.

3.5 Shifts in the Supply Curve

What is the difference between a change in supply and a change in quantity supplied?

- Change in Supply
  - caused by a change in an underlying, non-price factor.
  - shifts the entire supply curve to a new position.

3.5 Shifts in the Supply Curve

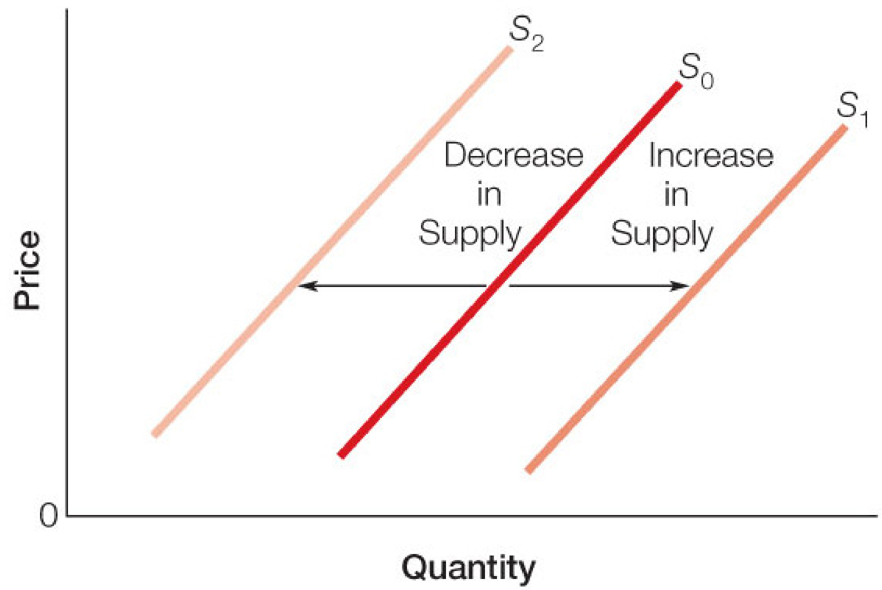
What is the difference between a change in supply and a change in quantity supplied?

- Increase in Supply:
  - represented by a rightward shift in the supply curve.
- Decrease in Supply:
  - represented by a leftward shift in the supply curve.

3.5 Shifts in the Supply Curve

What is the difference between a change in supply and a change in quantity supplied?

- An increase in supply shifts the supply curve to the right;
- A decrease in supply shifts the supply curve to the left, as seen in Exhibit 1.



3.5 Shifts in the Supply Curve

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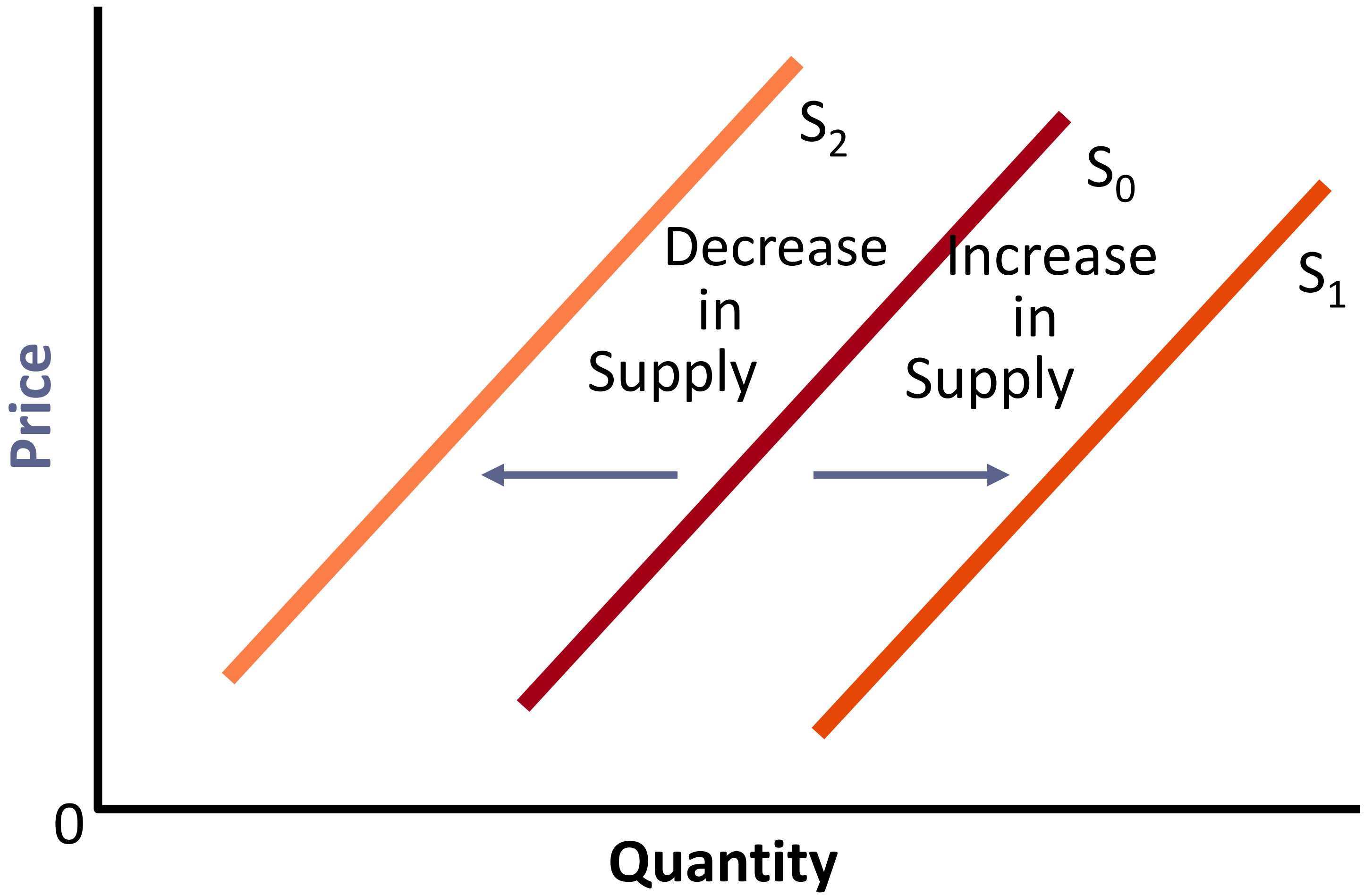


3.5 Shifts in the Supply Curve

What are the determinants of supply?

- Shifts in Supply
  - input prices
  - the prices of related products
  - expectations
  - number of suppliers
  - technology
  - regulations
  - taxes and subsidies
  - weather

3.5 Shifts in the Supply Curve

What are the determinants of supply?

- 1. Input Prices
  - Higher input prices increase the cost of production, decreasing profitability and causing the supply curve to shift to the left.
  - Lower input prices decrease the cost of production, increasing profitability and causing the supply curve to shift to the right.

3.5 Shifts in the Supply Curve

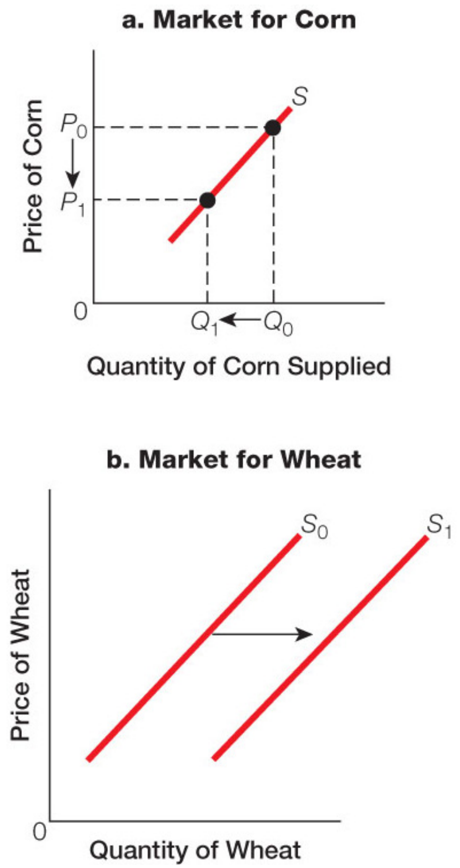
What are the determinants of supply?

- 2. Prices of Related Products
  - firms can sometimes use their resources to produce alternative products.
  - for example, land can be used to grow either barley or wheat.
  - if the price of barley falls, the farmer will shift acreage out of barley and into wheat.
  - thus a decrease in the price of barley will increase the supply of wheat.

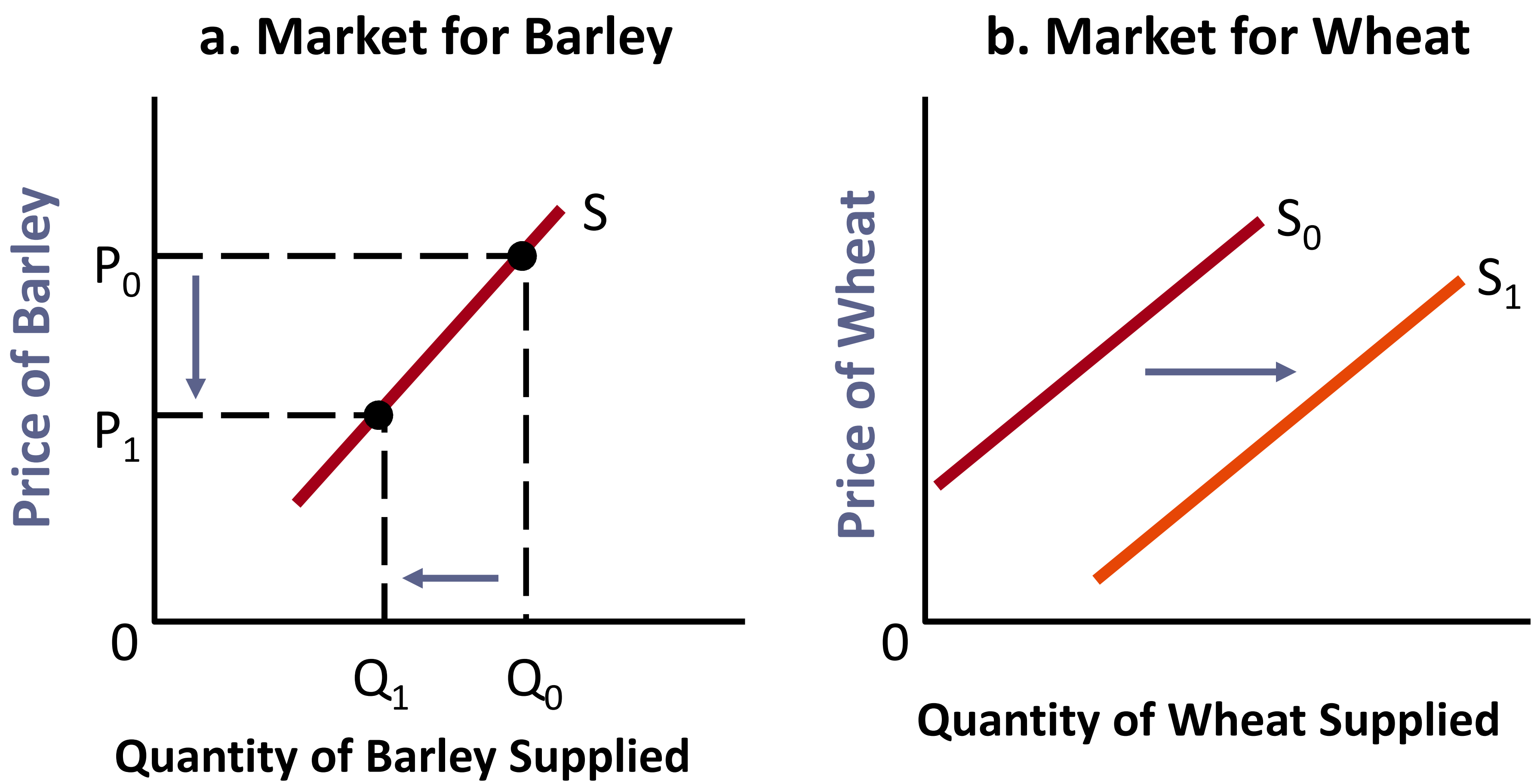
3.5 Shifts in the Supply Curve

What are the determinants of supply?

- If land can be used for either corn or wheat, a decrease in the price of corn (a movement along the supply curve) may cause some farmers to shift out of the production of corn and into wheat—shifting the wheat supply curve to the right. (SUBSTITUTION IN PRODUCTION)



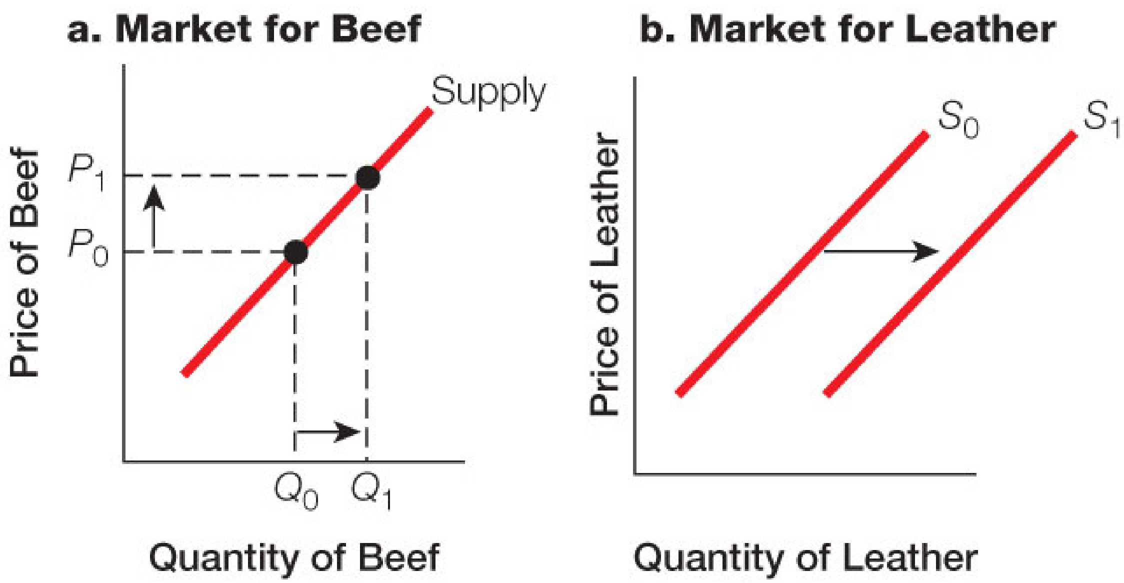
3.5 Shifts in the Supply Curve (Substitution in Production)



3.5 Shifts in the Supply Curve

What are the determinants of supply?

- If the price of the complement in production increases (cattle), it becomes more profitable and as a result, cattle ranchers increase the quantity supplied of beef, moving up the supply curve for beef, as seen in Exhibit 3(a). When cattle ranchers produce more beef, they also produce more leather.



3.5 Shifts in the Supply Curve

What are the determinants of supply?

- 3. Expectations
  - If producers expect a higher price in the future, they will supply less now than they otherwise would have, preferring to wait and sell when their goods will be more valuable.
  - For example, if an oil producer expected the price of oil to be higher next year, he might decide to store some of his current production of oil for next year when the price would be higher. Similarly, if producers expect now that prices will be lower later, they will supply more now.

3.5 Shifts in the Supply Curve

What are the determinants of supply?

- 4. Number of Suppliers
  - An increase in the number of suppliers leads to an increase in supply, denoted by a rightward shift in the supply curve.
  - For example, think of the number of smartphones that have entered the market over the last ten years, shifting the supply curve to the right. An exodus of suppliers will have the opposite impact, a decrease in supply, which is indicated by a leftward shift in the supply curve.

3.5 Shifts in the Supply Curve

What are the determinants of supply?

- 5. Technology
  - Decreases in costs often occur because of technological progress & such advances can lower prices.
  - Human creativity works to find new ways to produce goods & services using fewer or less costly inputs of labour, natural resources, or capital.
  - In recent years, despite generally rising prices, prices of electronic equipment – computers, cell phones, etc. have fallen dramatically

3.5 Shifts in the Supply Curve

- 5. Technology
  - At any given price, suppliers are willing to provide many more (of a given quality of) computers than in previous years simply because technology has dramatically reduced the cost of providing them.
    - Graphically, the increase in supply is indicated by a shift to the right in the supply curve.

3.5 Shifts in the Supply Curve

What are the determinants of supply?

- 6. Regulations
  - Changes in the legal and regulatory environment in which firms operate can affect supply.
  - Government regulations can influence costs of production to the firm
  - For example, if new safety or anti-pollution requirements increase labour and capital costs, the increased cost will result, ceteris paribus, in a decrease in supply. (supply curve shifts left)

3.5 Shifts in the Supply Curve

- 6. Regulations
  - An increase in government imposed minimum wage may have a similar effect by raising labour costs and decreasing supply in markets, that employ many low-wage workers.
  - Deregulation – whereby governments reduce or eliminate restrictions on individuals or businesses can shift the supply curve to the right.

3.5 Shifts in the Supply Curve

- 7. Taxes & Subsidies
  - an increase in certain taxes will increase costs of production, decreasing supply.
  - subsidies (the opposite of taxes) can lower costs of production, increasing supply.
- 8. Weather
  - weather conditions can affect the supply of certain goods and services (e.g. golf).

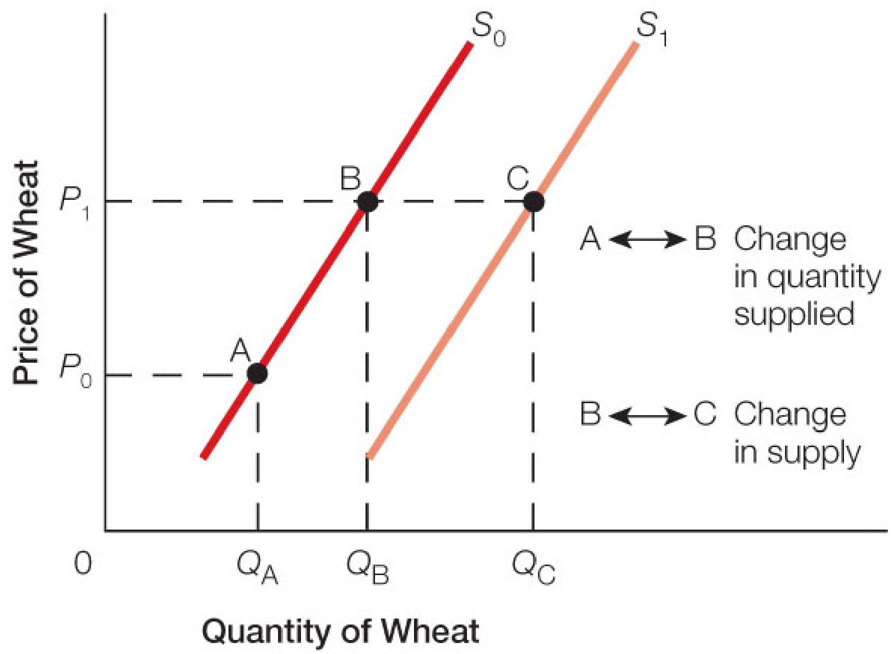
3.5 Shifts in the Supply Curve

What are the determinants of supply?

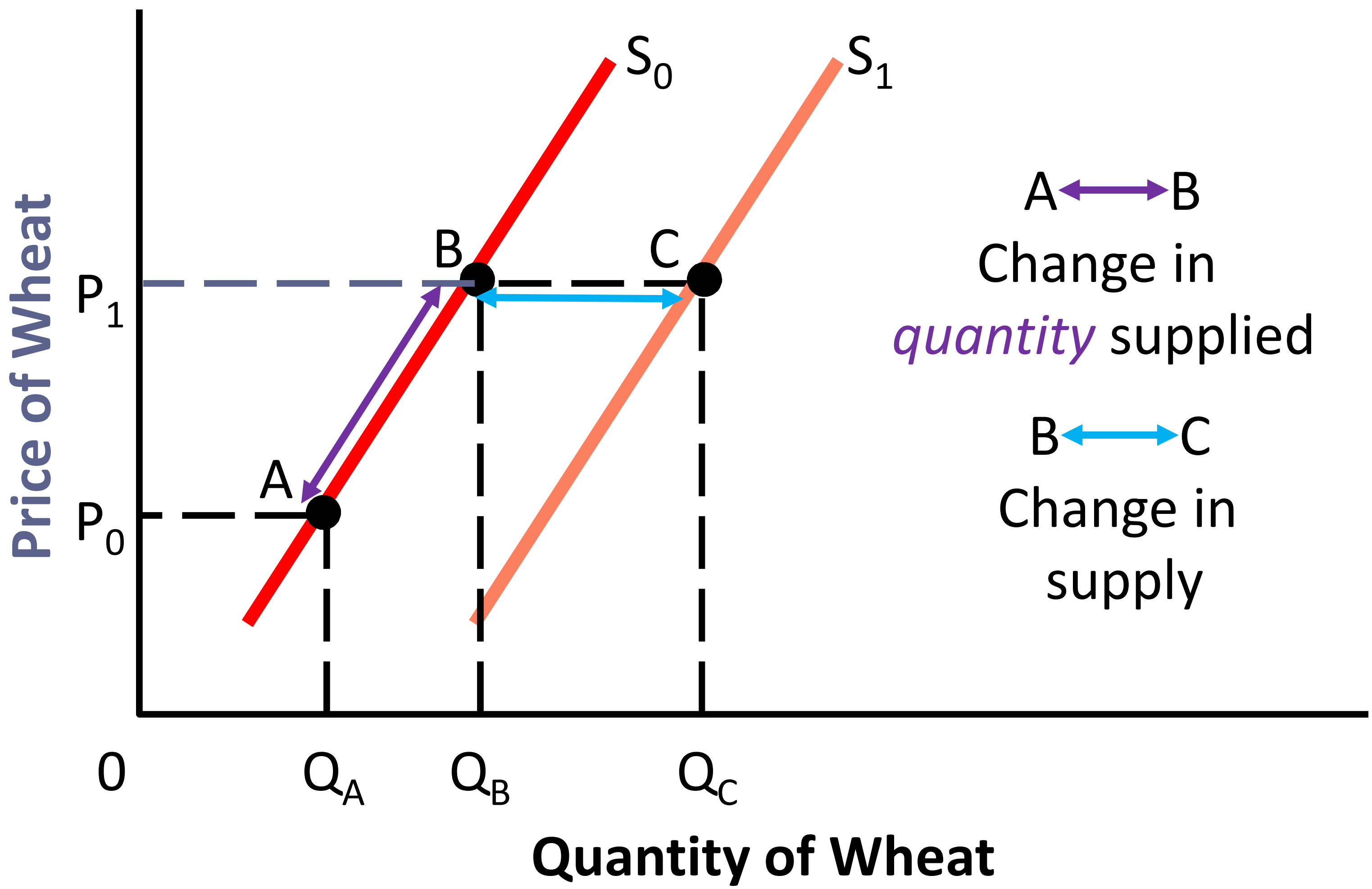
- Supply versus Quantity Supplied:
  - a change in price leads to a change in quantity supplied.
  - a change in an underlying factor leads to a change in supply.

3.5 Shifts in the Supply Curve

- Review the difference between changes in quantity supplied and changes in supply



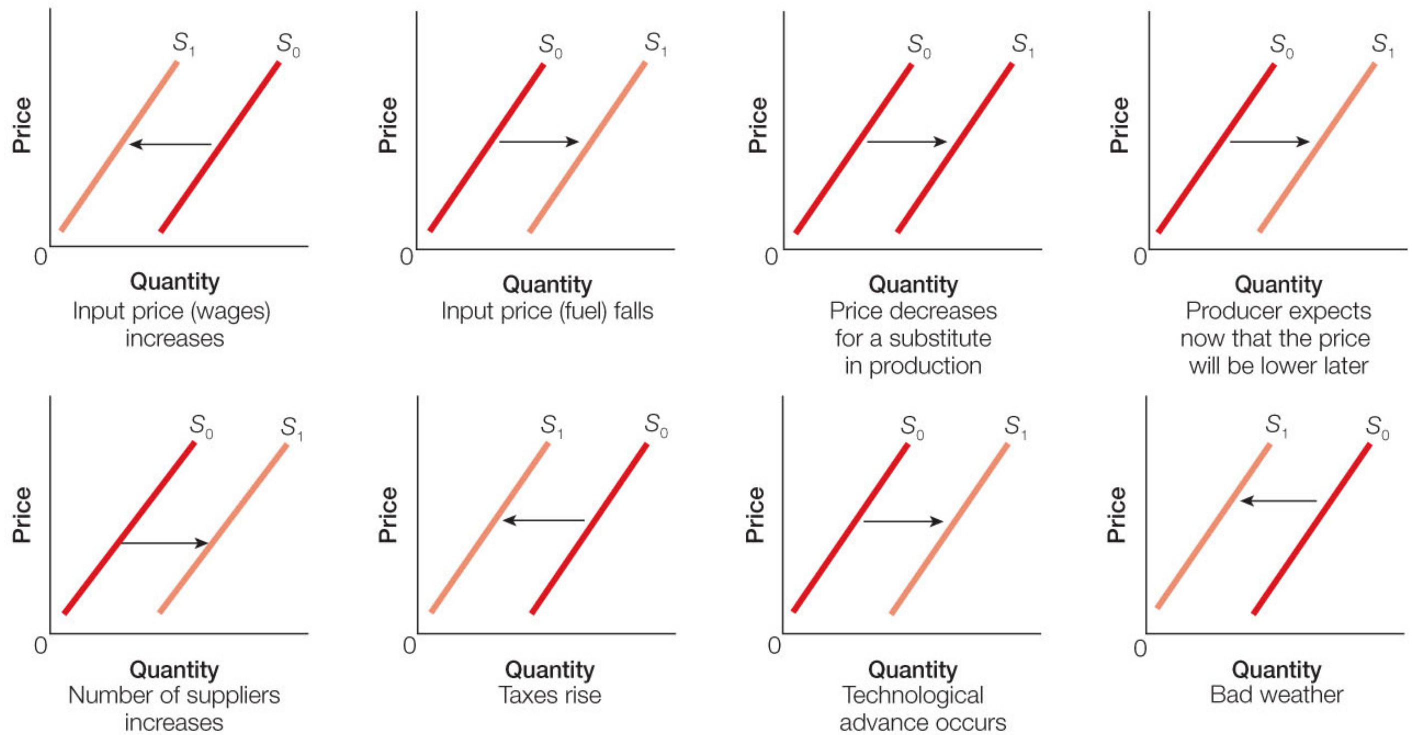
3.5 Shifts in the Supply Curve



3.5 Shifts in the Supply Curve

What are the determinants of supply?

- Summary of the Supply Shifters



3.5 Shifts in the Supply Curve

Section Check

- The law of supply states that the higher (lower) the price of the good, the greater (smaller) the quantity supplied, ceteris paribus..
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- The market supply curve is a graphical representation of the amount of goods and services that suppliers are willing and able to supply at various prices.