Supply and Demand: How Markets Work

Supply and Demand

- Supply and demand are the forces that make market economies work.
- Modern microeconomics is about supply, demand, and market equilibrium.

Markets and Competition

A *market* is a group of buyers and sellers of a particular good or service.

- Buyers determine *demand*.
- Sellers determine *supply*

Markets and Competition

Some markets are local; others are national or international. Some are highly personal, involving face-to-face contact between demander and supplier; others are faceless, with buyer and seller never seeing or knowing each other.

A *competitive market* is a market in which there are many buyers and sellers so that each has a negligible impact on the market price.

Competition: Perfect and Otherwise

- Perfect Competition
  - Products are the same
  - Numerous buyers and sellers so that each has no influence over price
  - Buyers and Sellers are price takers
- Monopoly
  - One seller, and seller controls price

Competition: Perfect and Otherwise

- Oligopoly
  - Few sellers
  - Not always aggressive competition
- Monopolistic Competition
  - Many sellers
  - Slightly differentiated products
  - Each seller may set price for its own product

Demand

- What we are willing to give up measures the value – our personal value. That value, expressed in dollars, is the willingness to pay. That is, if you are willing to give up three cents for a single good, your willingness to pay is three cents.

Demand

- *Quantity demanded* is the amount of a good that buyers are willing and able to purchase.

- Law of Demand states that, other things equal, the quantity demanded of a good falls when the price of the good rises.

Demand

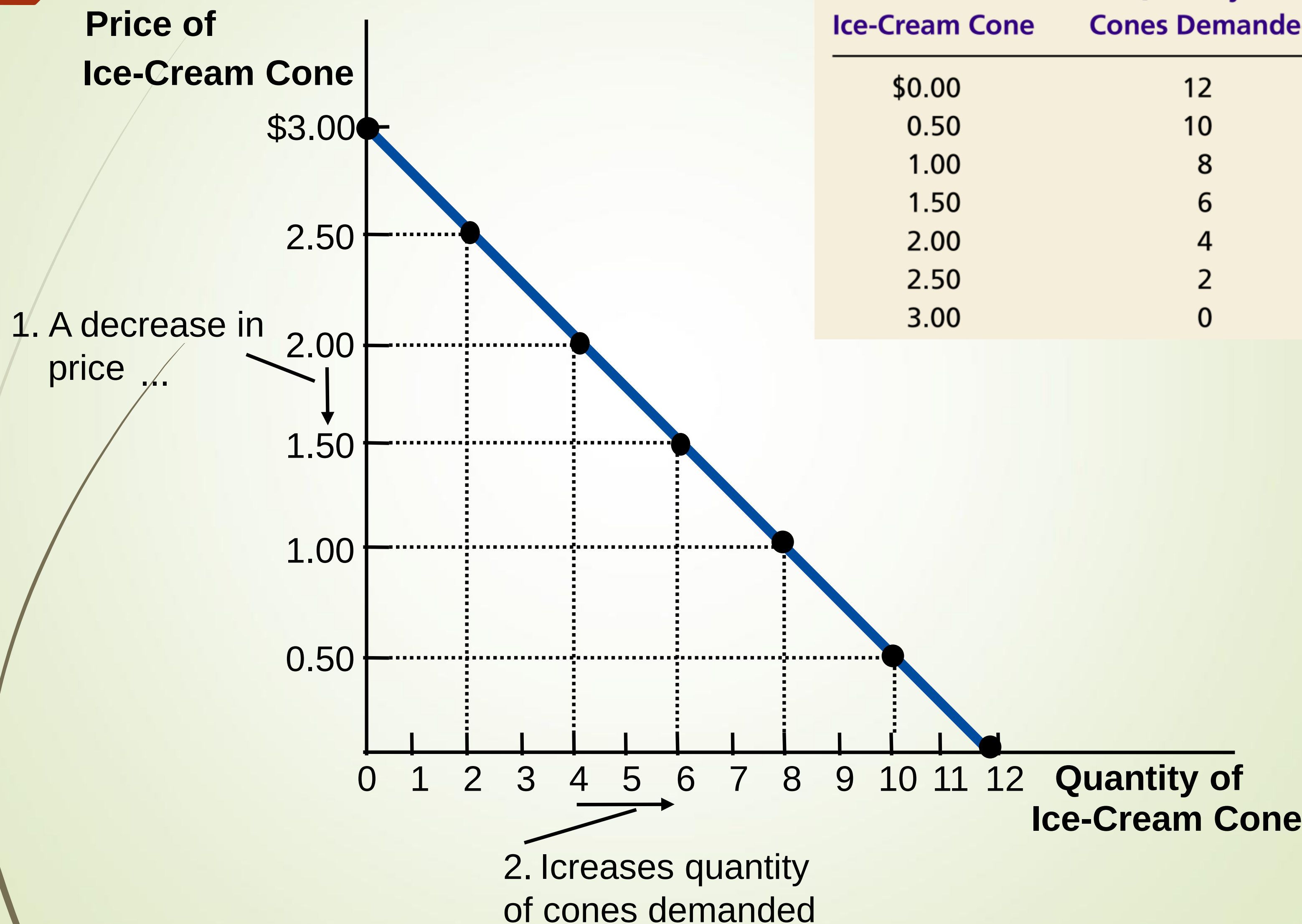
- Many factors other than the price of the product being considered affect the amount purchased. For example, the quantity of Nikes purchased will depend not only on the price of Nikes but also on the prices of such substitutes as Reeboks, Adidas, and New Balances. The law of demand in this case says that fewer Nikes will be purchased if the price of Nikes rises and if the prices of Reeboks, Adidas, and New Balances all remain constant.

The Demand Curve: The Relationship between Price and Quantity Demanded

- Demand Schedule is a table that shows the relationship between the price of the good and the quantity demanded.

- The *demand curve* is a graph of the relationship between the price of a good and the quantity demanded.

Demand Schedule and Demand Curve

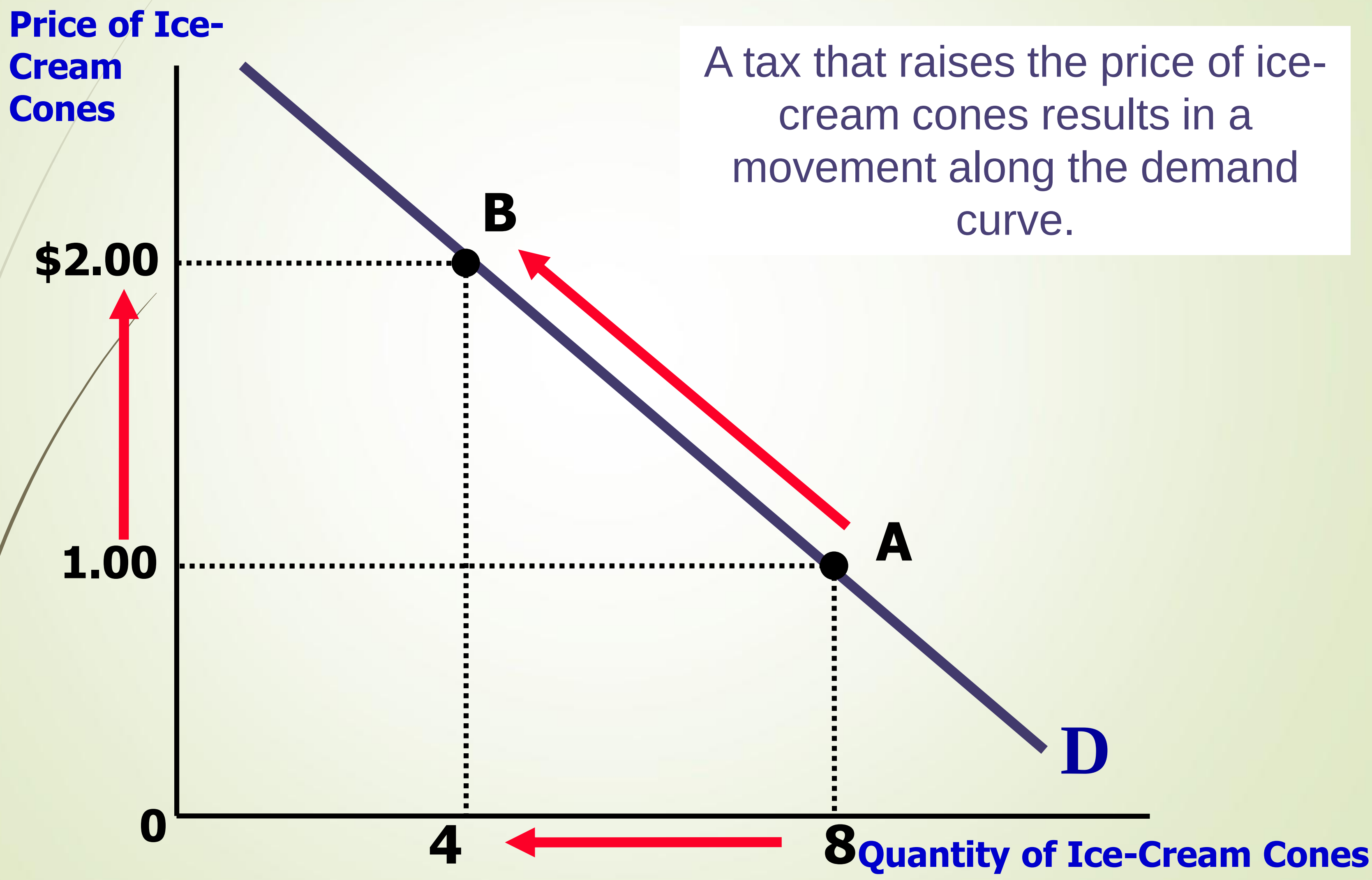


Price of Ice-Cream Cone	Quantity of Cones Demanded
$0.00	12
0.50	10
1.00	8
1.50	6
2.00	4
2.50	2
3.00	0

Market Demand versus Individual Demand

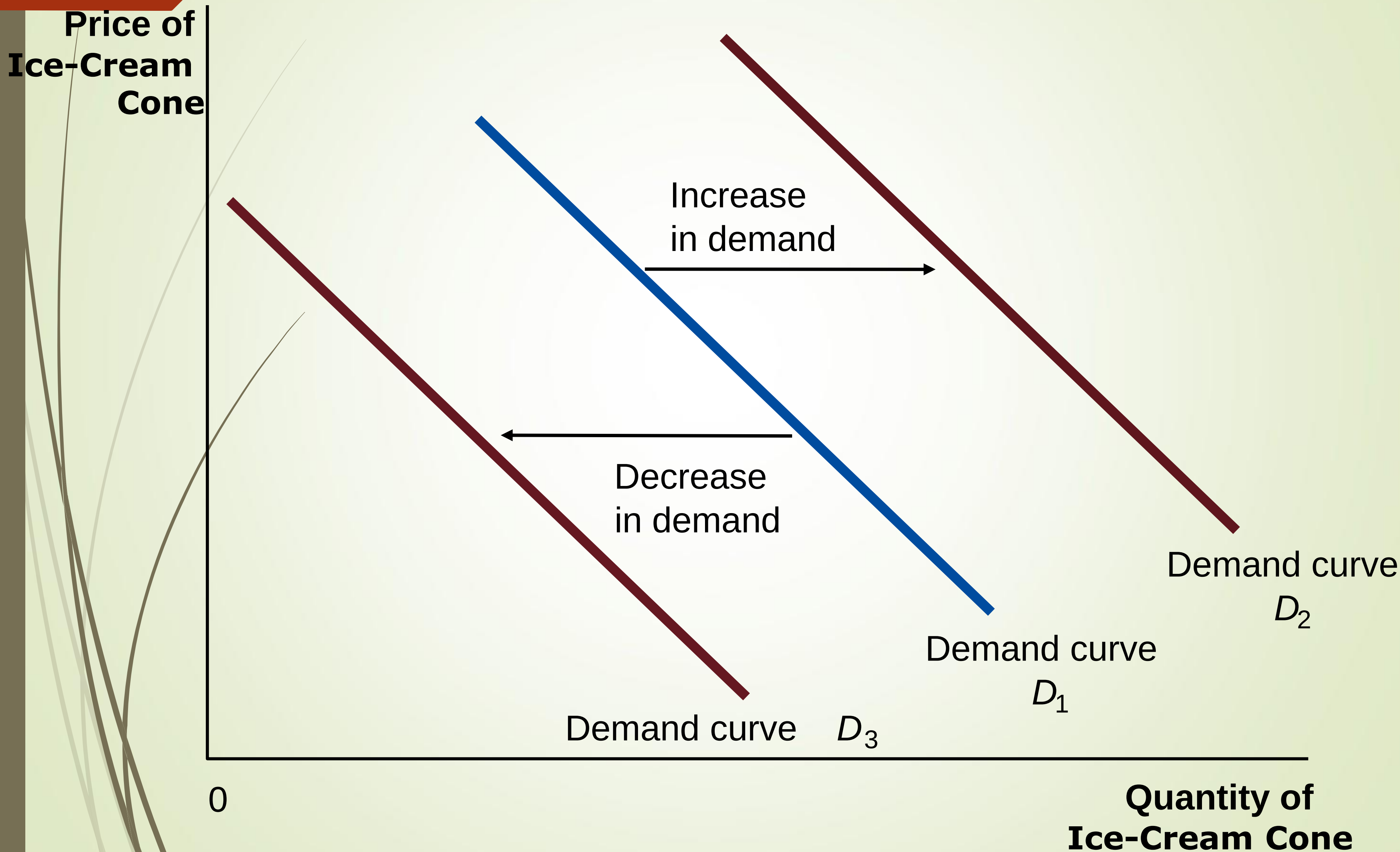
- Market demand refers to the sum of all individual demands for a particular good or service.
- Graphically, individual demand curves are summed horizontally to obtain the market demand curve.

Changes in Quantity Demanded



A tax that raises the price of ice-cream cones results in a movement along the demand curve.

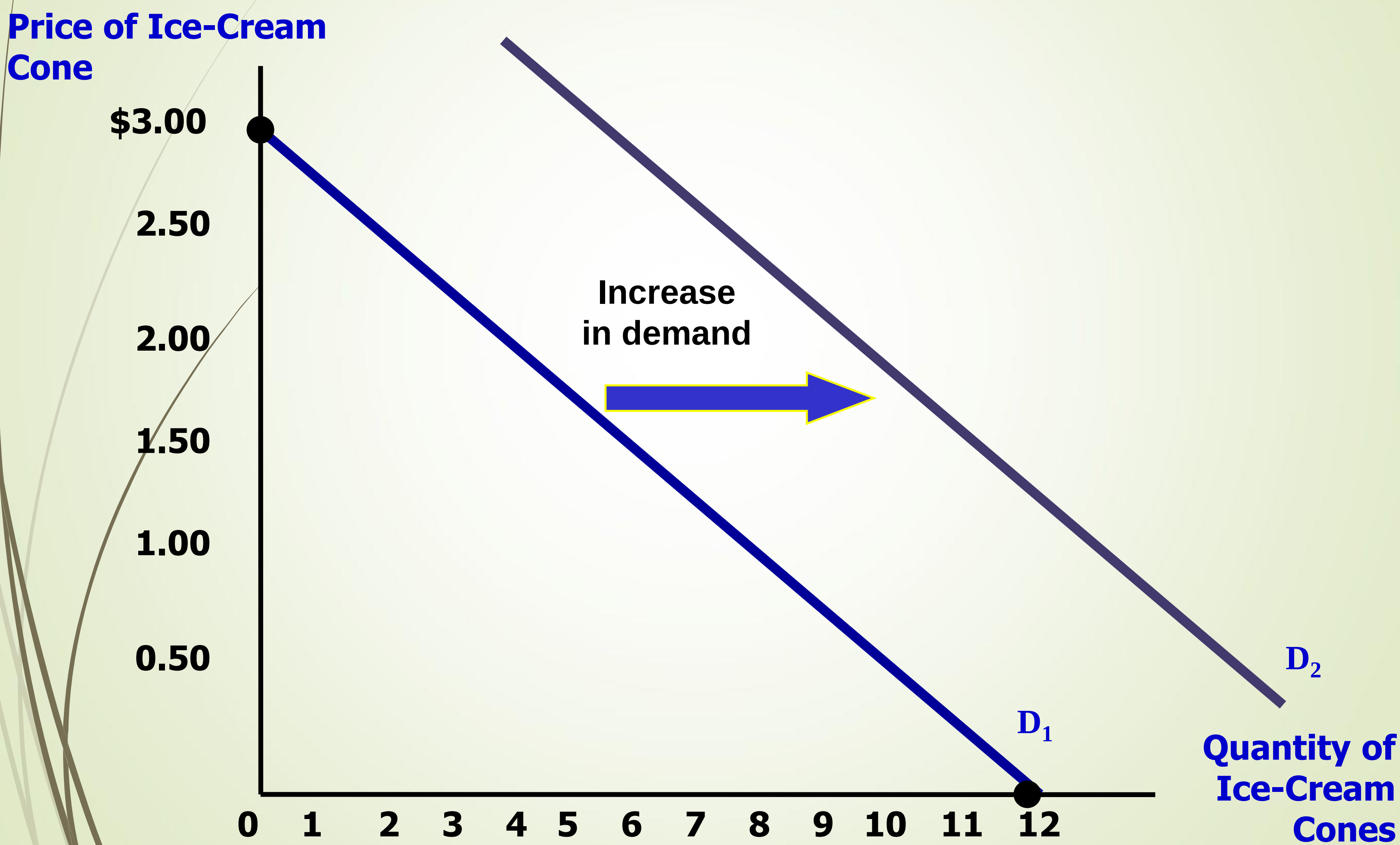
Shifts in the Demand Curve



Shifts in the Demand Curve

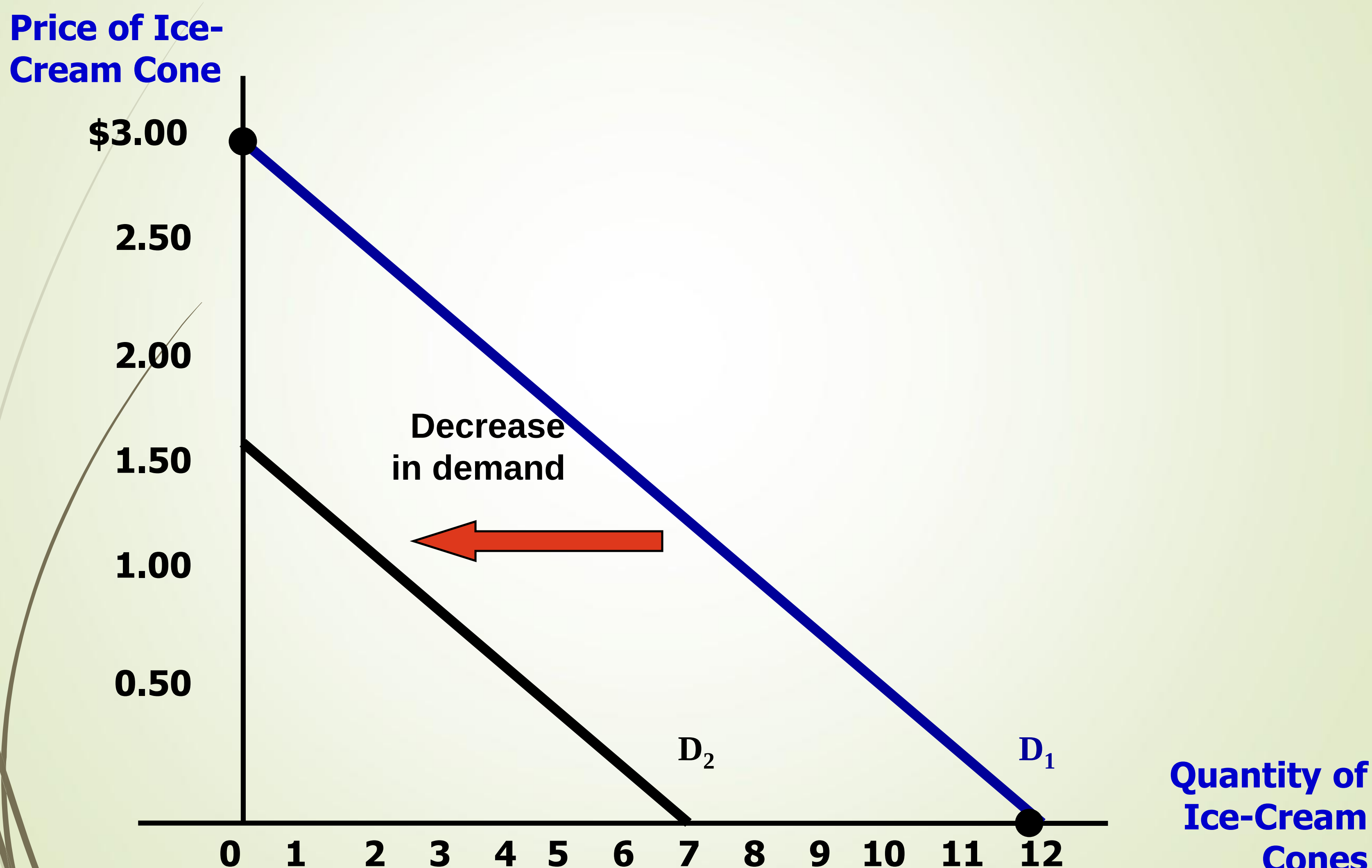
- Consumer Income
  - As income increases the demand for a *normal good* will increase.
  - As income increases the demand for an *inferior good* will decrease.

Normal Good



Price of Ice-Cream Cone
$3.00
2.50
2.00
1.50
1.00
0.50
Increase in demand
D1
D2
0 1 2 3 4 5 6 7 8 9 10 11 12
Quantity of Ice-Cream Cones

Inferior Good



Shifts in the Demand Curve

- The income effect indicates that a lower price increases the purchasing power of a buyer's money income, enabling the buyer to purchase more of the product than before.

Shifts in the Demand Curve

- A higher price has the opposite effect. The substitution effect suggests that at a lower price buyers have the incentive to substitute what is now a less expensive product for similar products that are now relatively more expensive. The product whose price has fallen is now "a better deal" relative to the other products.

Shifts in the Demand Curve

- Prices of Related Goods
  - When a fall in the price of one good reduces the demand for another good, the two goods are called *substitutes*.
  - When a fall in the price of one good increases the demand for another good, the two goods are called *complements*.

Shifts in the Demand Curve

- Consumer Expectations

Changes in consumer expectations may shift demand. A newly formed expectation of higher future prices may cause consumers to buy now in order to "beat" the anticipated price rises, thus increasing current demand. That is often what happens in so-called hot real estate markets.

Supply

- *Quantity supplied* is the amount of a good that sellers are willing and able to sell.

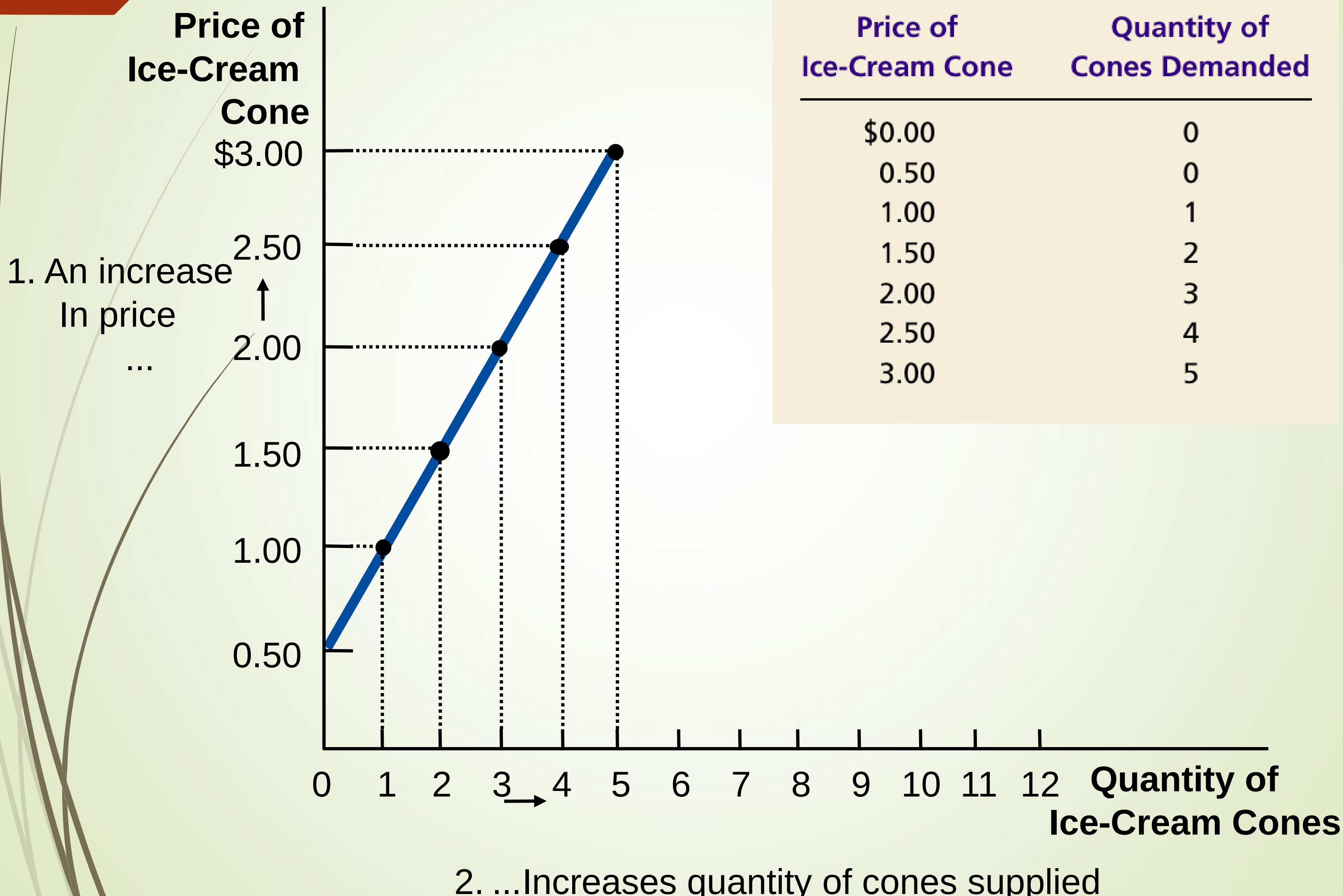
- The *law of supply* states that, other things equal, the quantity supplied of a good rises when the price of the good rises.

The Supply Curve: The Relationship between Price and Quantity Supplied

- The *supply schedule* is a table that shows the relationship between the price of the good and the quantity supplied.

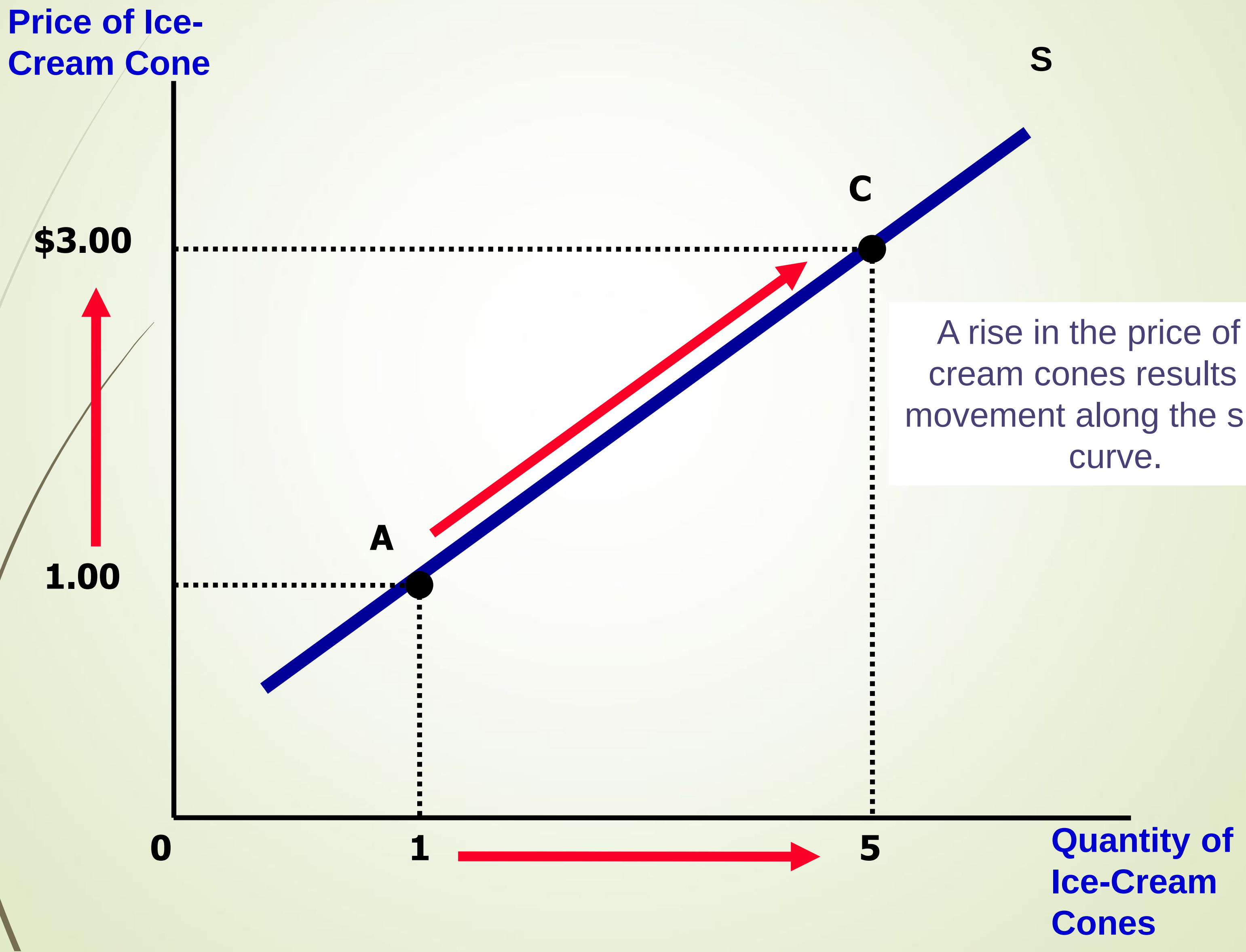
- The *supply curve* is the graph of the relationship between the price of a good and the quantity supplied.

Supply Schedule and Supply Curve



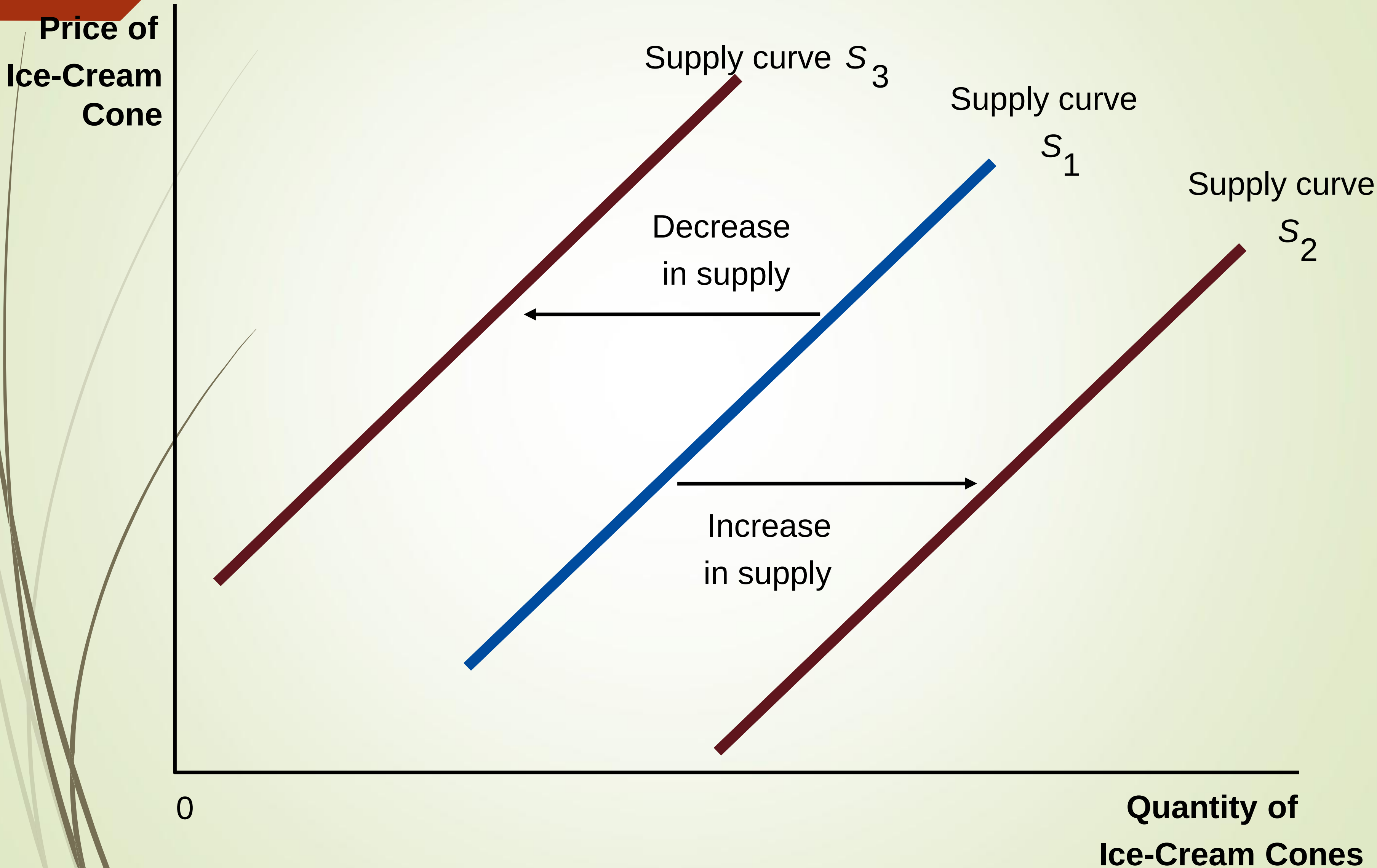
Price of Ice-Cream Cone	Quantity of Cones Demanded
$0.00	0
0.50	0
1.00	1
1.50	2
2.00	3
2.50	4
3.00	5

Change in Quantity Supplied



A rise in the price of ice cream cones results in a movement along the supply curve.

Shifts in the Supply Curve



Shifts in the Supply Curve

- Technology

Improvements in technology (techniques of production) enable firms to produce units of output with fewer resources. Because resources are costly, using fewer of them lowers production costs and increases supply.

Shifts in the Supply Curve

- Taxes and Subsidies

Businesses treat most taxes as costs. An increase in sales or property taxes will increase production costs and reduce supply. In contrast, subsidies are “taxes in reverse.” If the government subsidizes the production of a good, it in effect lowers the producers’ costs and increases supply.

Shifts in the Supply Curve

- Producer Expectations

Changes in expectations about the future price of a product may affect the producer’s current willingness to supply that product. It is difficult, however, to generalize about how a new expectation of higher prices affects the present supply of a product.

Supply and demand together

- Economists use the term equilibrium in the same way as the word is used in physics, to represent a steady state in which opposing forces are balanced, so that the current state of the system tends to persist. In the context of supply and demand, equilibrium refers to a condition where the pressure for higher prices is exactly balanced by a pressure for lower prices, and thus that the current state of exchange between buyers and sellers can be expected to persist.

Supply and demand together

- *Equilibrium* refers to a situation in which the price has reached the level where quantity supplied equals quantity demanded.

Supply and demand together

- *Equilibrium Price*
  - The price that balances quantity supplied and quantity demanded.
  - On a graph, it is the price at which the supply and demand curves intersect.
- *Equilibrium Quantity*
  - The quantity supplied and the quantity demanded at the equilibrium price.
  - On a graph it is the quantity at which the supply and demand curves intersect.

Supply and demand together

Demand Schedule

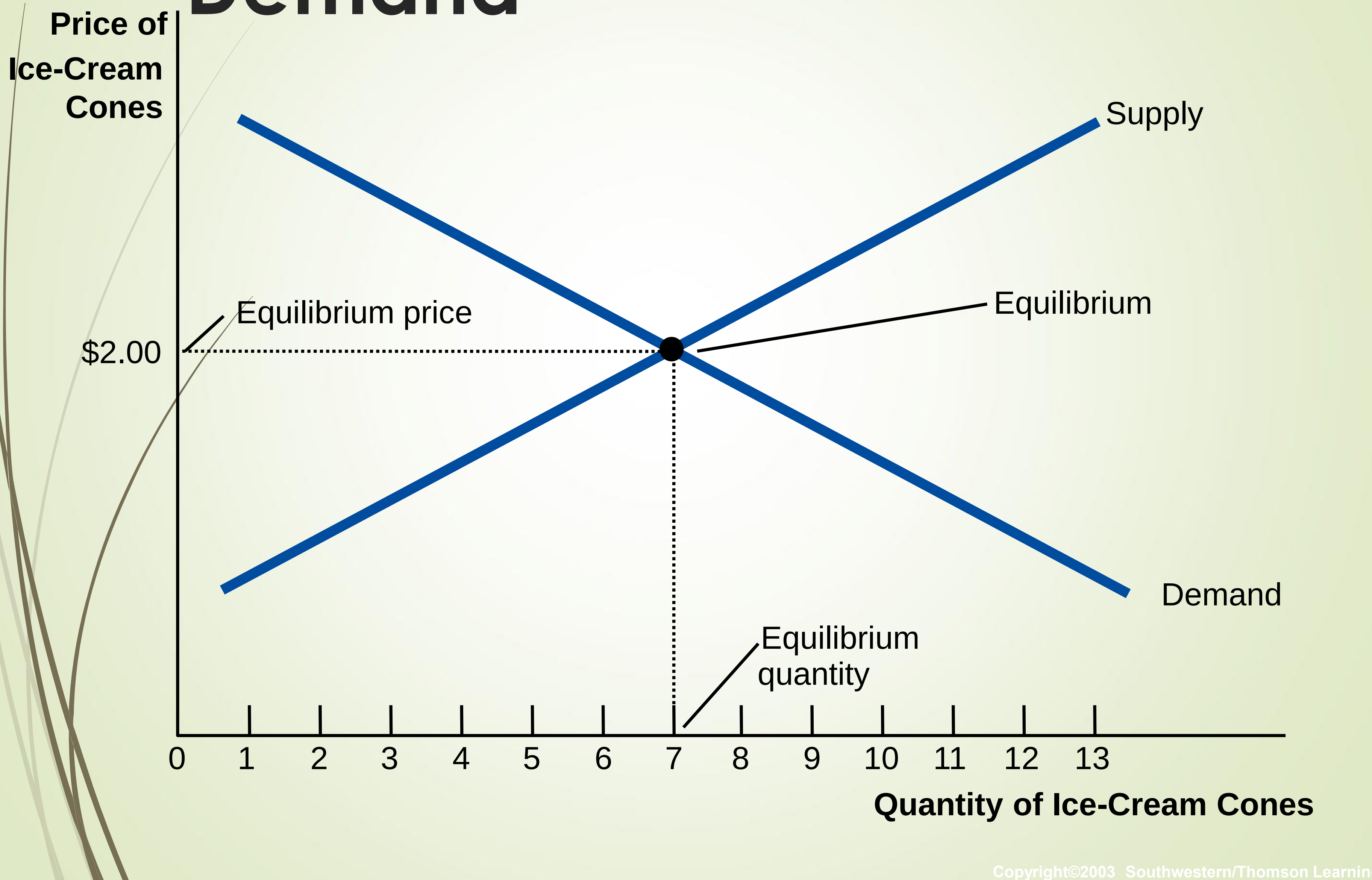
Price of Ice-Cream Cone	Market
$0.00	19
0.50	16
1.00	13
1.50	10
2.00	7
2.50	4
3.00	1

Supply Schedule

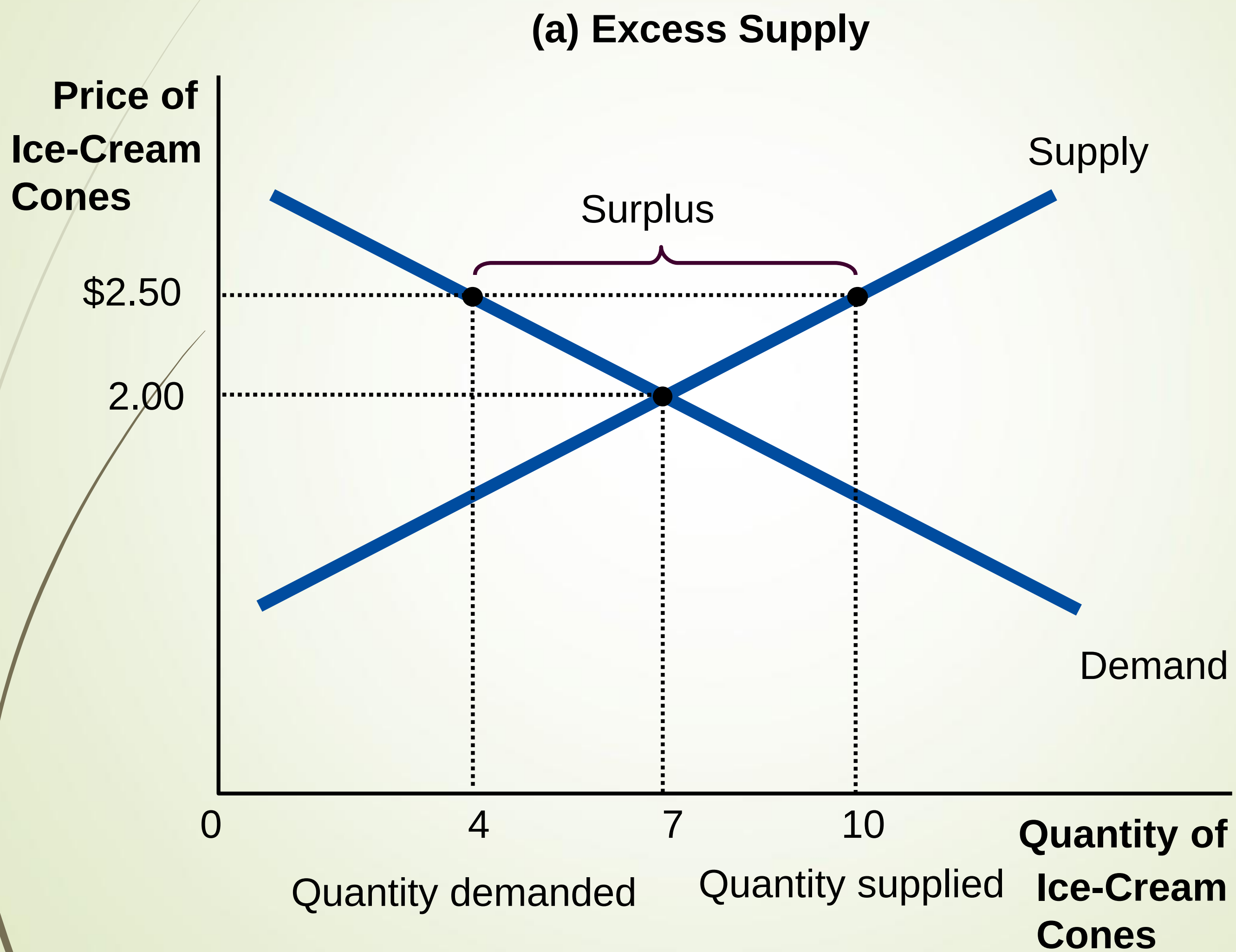
Price of Ice-Cream Cone	Market
$0.00	0
0.50	0
1.00	1
1.50	4
2.00	7
2.50	10
3.00	13

At $2.00, the quantity demanded is equal to the quantity supplied!

The Equilibrium of Supply and Demand



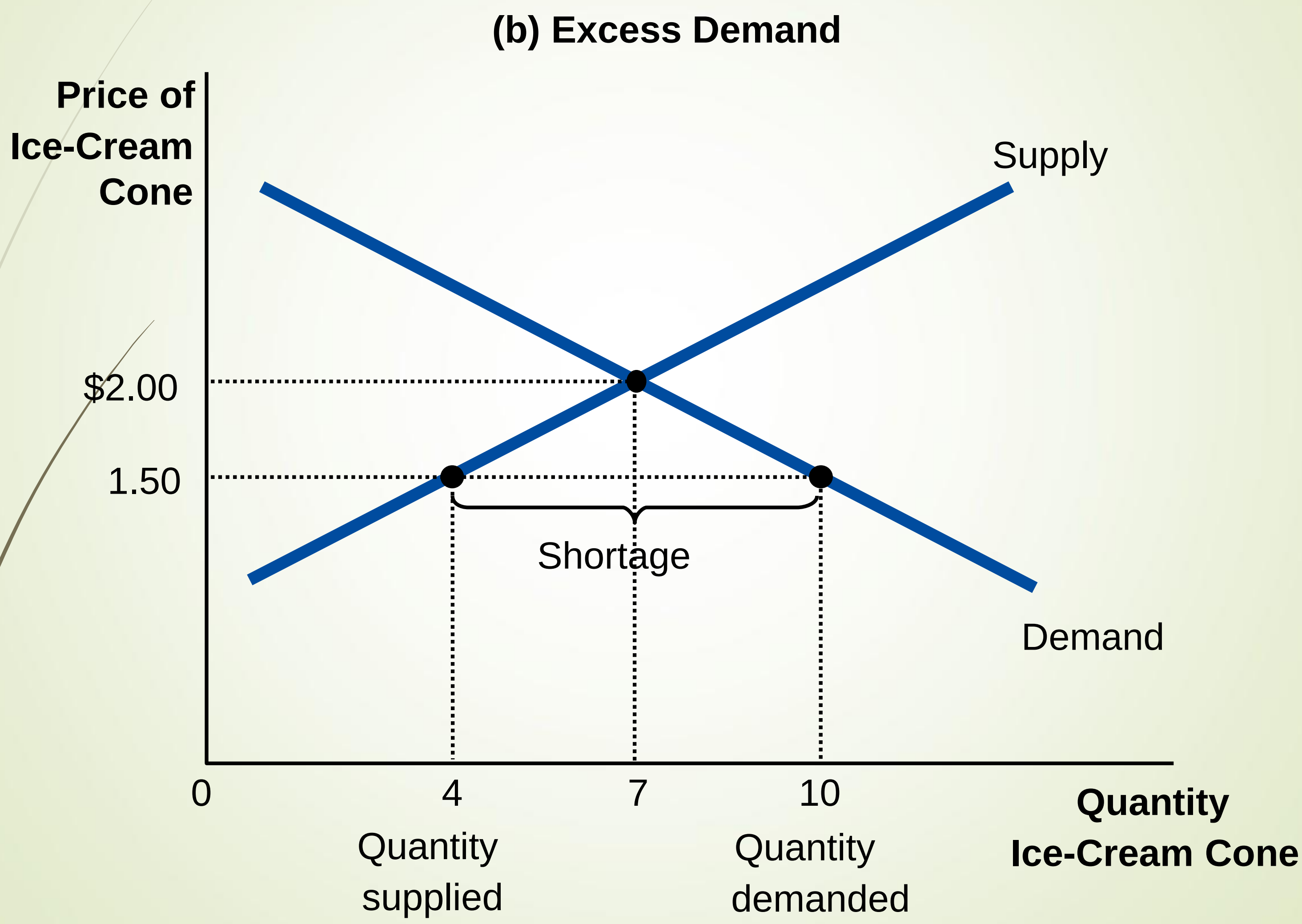
Markets Not in Equilibrium



Equilibrium

- *Surplus*
  - When price > equilibrium price, then quantity supplied > quantity demanded.
- *Shortage*
  - When price < equilibrium price, then quantity demanded > the quantity supplied.

Markets Not in Equilibrium



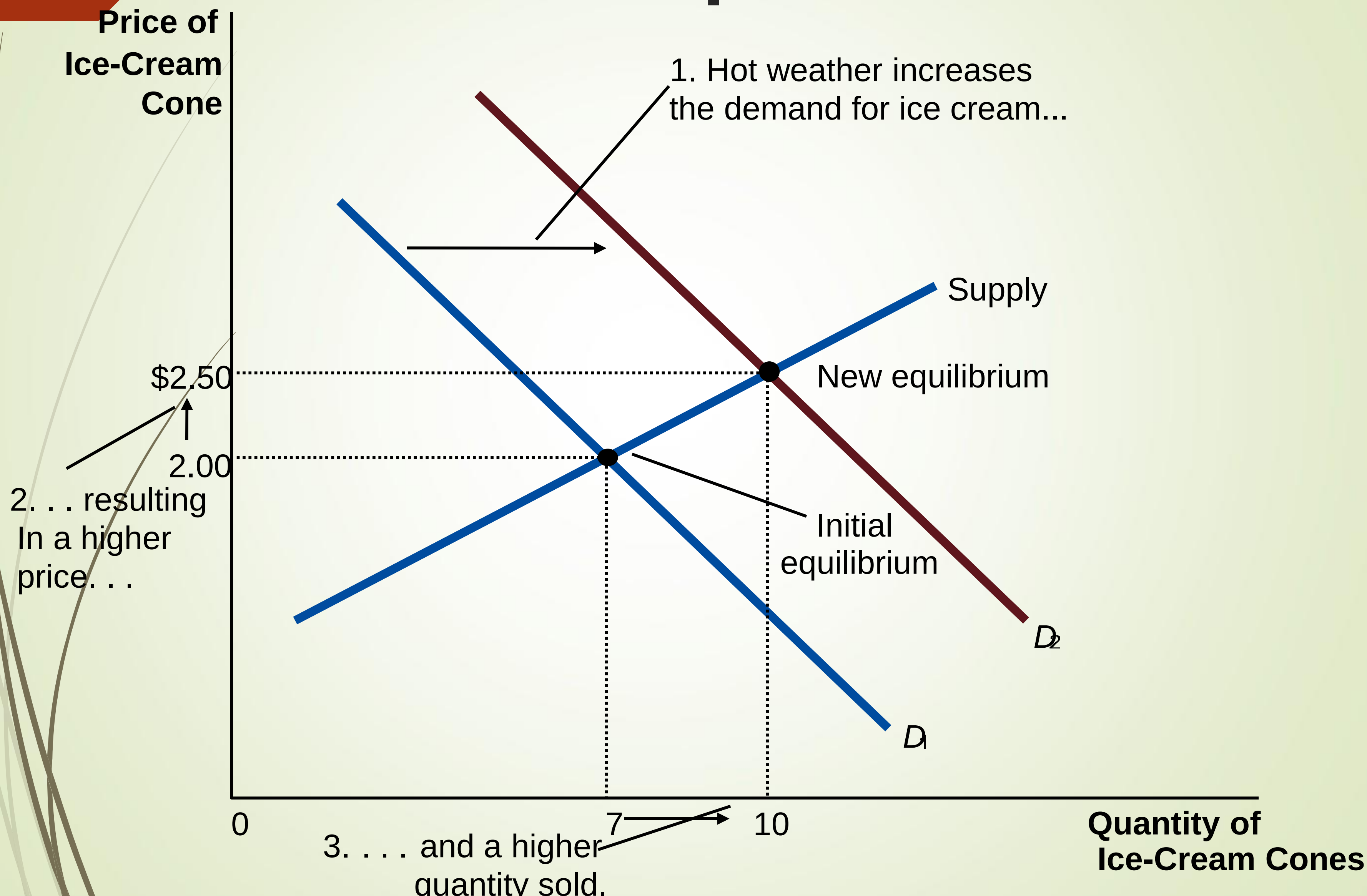
Equilibrium

- *Law of supply and demand*
  - The claim that the price of any good adjusts to bring the quantity supplied and the quantity demanded for that good into balance.

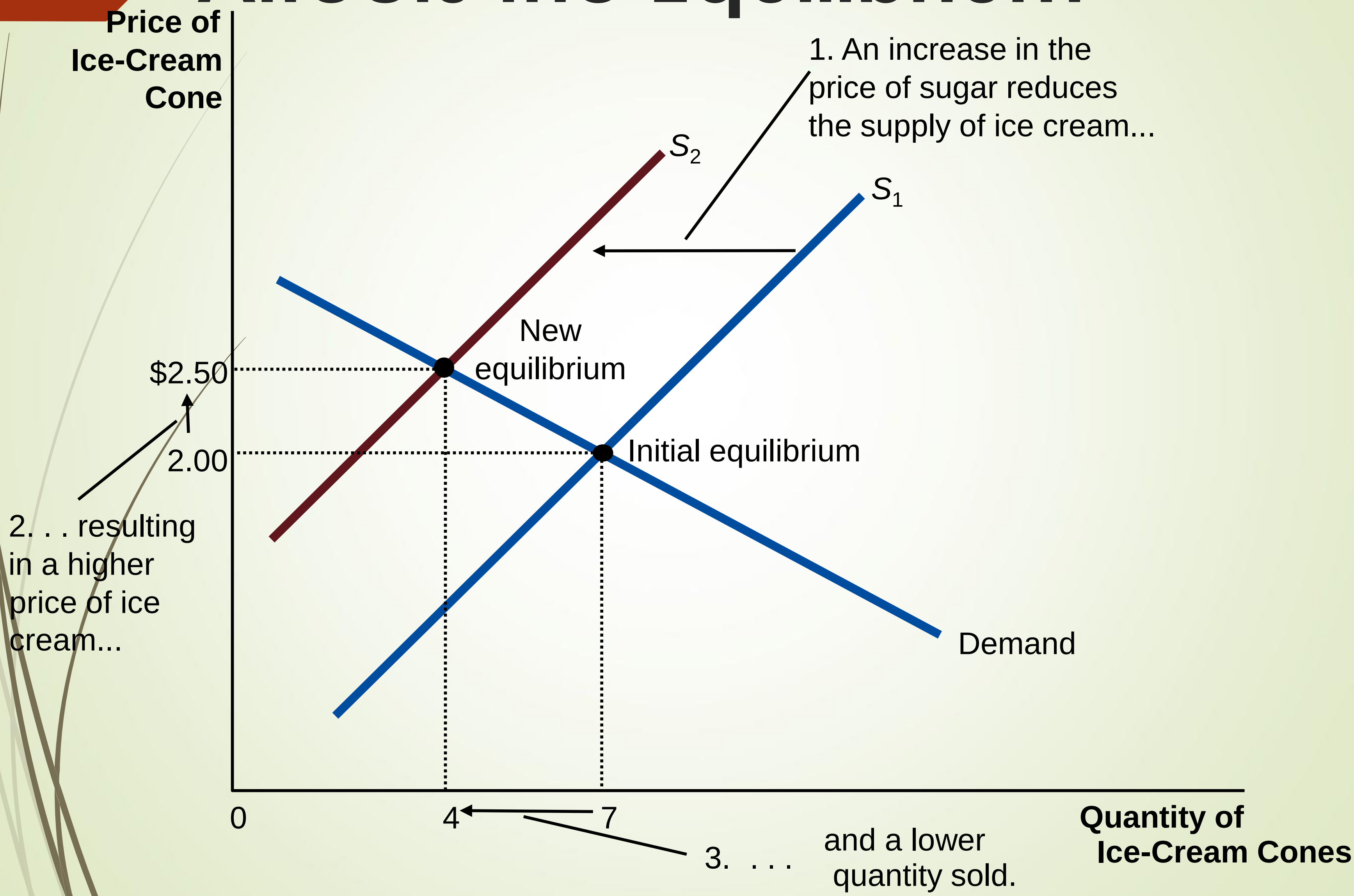
Three Steps to Analyzing Changes in Equilibrium

- Decide whether the event shifts the supply or demand curve (or both).
- Decide whether the curve(s) shift(s) to the left or to the right.
- Use the supply-and-demand diagram to see how the shift affects equilibrium price and quantity.

How an Increase in Demand Affects the Equilibrium



How a Decrease in Supply Affects the Equilibrium



Literature:

- Gregory N. Mankiw, Principles of Economics, Cengage, Learning; 7th edition (2014)
- R. Preston McAfee, Introduction to Economic Analysis, Orange Grove Texts Plus (2009)
- Campbell R. McConnell, Stanley L. Brue, Sean M. Flynn, Economics: Principles, Problems, and Policies, McGraw-Hill Education; 19th edition (2011)
- Robert H. Frank, Ben S. Bernanke, Principles of Economics, McGraw-Hill Education; 5th edition (2012)
- Paul A. Samuelson, William D. Nordhaus, Economics, McGraw-Hill Education; 19th edition (2009)