

CHAPTER 5

Supply

Why It Matters

Just as a coin has two sides, so does a market. A coin has heads and tails; a market has a buying side and a selling side. The previous chapter discussed demand, which is the buying side of the market. This chapter discusses supply, the selling side.



These personally autographed guitars are being examined prior to an auction. Before reading this chapter, can you guess how the supply of these guitars will affect the price that people will pay for them in the auction?

In your life, you will be both buyer and seller. You will buy many goods, and you will also sell some goods. You will certainly end up selling a resource—your labor. In Chapter 4 we learned about you as a buyer. In this chapter, we will have the chance to learn about you as a seller.



Economics Around the Clock

The following events occurred one day in April.

7:04 A.M. Tara has young twin boys, Dave and Quentin. She has tried repeatedly to get both Dave and Quentin to behave better than they have been behaving. Yesterday she promised that she would take them to a movie if they behaved better. Dave ended up behaving a lot better, but Quentin behaved only slightly better. Right now she is asking Quentin why his behavior didn't improve as much as his brother's.

- **What does a concept like "elasticity of supply" have to do with the twins?**

9:10 A.M. Georgia and Tom are sitting on a train that is traveling from East Hampton, New York, into downtown Manhattan. Georgia is reading an article about taxes in the newspaper. It seems that the government wants to place a tax on the production of cigarettes. For every cigarette pack produced, the government wants cigarette manufacturers to pay a \$2 tax. Georgia tells Tom about the article. "What do you think of that?" she asks. Tom responds, "I think that tax is going to end up reducing the supply of cigarettes."

- **Will the tax reduce the supply of cigarettes?**

11:03 A.M. Angie owns a small oil company in Texas. She believes the price of a barrel of crude oil will be higher in three months than it is today. She is thinking about not selling her current oil supply until the oil price goes up. She knows she will lose the interest on the oil revenue she would have if she sold the oil now, but thinks that the higher price in three months might more than compensate for lost interest.

- **Would you advise Angie to wait until later to sell her oil?**

2:38 P.M. Frank and Pete are having coffee at their local Starbuck's. Frank owns a construction company, and Pete is his business manager. Frank says, "I'm not sure how many more people will want to work for us if we pay a higher wage. No matter how much money we offer, people just don't want to work in construction the way they once did." Pete just says, "I don't know. Money is a powerful motivator."

- **Will more people want to work in the construction industry if Frank increases the wage rate (dollars per hour) he pays his employees?**

Understanding Supply

Focus Questions

- ▶ What is supply?
- ▶ Are all supply curves upward sloping?
- ▶ What is the difference between a supply schedule and a supply curve?

Key Terms

supply
law of supply
direct relationship
quantity supplied
supply schedule
supply curve

What Is Supply?

Like the word *demand*, the word **supply** has a specific meaning in economics. It refers to the willingness and ability of sellers to produce and offer to sell different quantities of a good at different prices during a specific time period. The supply of a good or service requires both a supplier's *willingness* and *ability* to produce and sell. Willingness to produce and sell means that the person wants or desires to produce and sell the good. Ability to produce and sell means that the person is capable of producing and selling the good.

EXAMPLE: Jackie is willing to build and sell wooden chairs, but unfortunately she doesn't know *how* to build a chair. In other words, she has the willingness but not the ability. Outcome: Jackie will not supply chairs. ♦

What Does the Law of Supply Say?

Suppose you are a supplier, or producer, of TV sets, and the price of a set rises from \$300 to \$400. Would you want to supply more or

fewer TV sets at the higher price? Most people would say more. If you did, you instinctively understand the **law of supply**, which says that as the price of a good increases, the quantity supplied of the good increases, and as the price of a good decreases, the quantity supplied of the good decreases. In other words, price and quantity supplied move in the same direction. This **direct relationship** can be shown in symbols:

Law of Supply

If $P \uparrow$ then $Q_s \uparrow$

If $P \downarrow$ then $Q_s \downarrow$

(where P = price and Q_s = quantity supplied)

When economists use the word *supply*, they mean something different from what they mean when they use the words *quantity supplied*. Again, supply refers to the willingness and ability of sellers to produce and offer to sell different quantities of a good at different prices. For example, a supply of new houses in the housing market means that firms are currently willing and able to produce and offer to sell new houses.

supply

The willingness and ability of sellers to produce and offer to sell different quantities of a good at different prices during a specific time period.

law of supply

A law stating that as the price of a good increases, the quantity supplied of the good increases, and as the price of a good decreases, the quantity supplied of the good decreases.

direct relationship

A relationship between two factors in which the factors move in the same direction. For example, as one factor rises, the other rises, too.

Are You Nicer to Nice People?

Business firms supply cars, clothes, food, computers, and much more. The quantity of each good or service they supply depends on price. According to the law of supply, the higher the price, the greater the quantity supplied. In other words, the higher the price of notebook paper, the greater the quantity supplied of notebook paper.

Do you think the law of supply might apply to personal, as well as business, situations? Do you think people might behave differently toward others depending on the reactions to their emotions and behavior? Let's look at some examples of one "product" that people can supply to a greater or lesser degree: niceness.

Wouldn't you say that people can supply different amounts of niceness? Think about your own behavior: You can be very nice to a person, moderately nice, a little

nice, or not nice at all. What determines how much niceness you supply to people? (In other words, why are you nicer to some people than to others?)

One factor that may determine how nice you are to someone is how much someone "pays" you to be nice. It may be a stretch, but think of yourself as selling niceness,



in much the same way you might think of yourself selling shoes, T-shirts, corn, or computers. The quantity of each item you supply depends on how much the buyer pays you.

If people want to buy niceness from you, what kind of payment will they offer? A person could come up to you and say, "I will pay you \$100 if you will be nice to me," but usually things don't work that way. People

buy, and therefore pay for, niceness not with the currency of dollars and cents but with the currency of niceness. In other words, the nicer they are to you, the more they are paying you to be nice to them.

Suppose a person can pay three prices of niceness: the very-nice price (high price), the moderately nice price, and the little-nice price (low price). Now consider two persons, Caprioli and Turen. Caprioli pays you the very-nice price, and Turen pays you the little-nice price. Will you be nicer to Caprioli, who pays you the higher price, or to Turen, who pays you the lower price?

If you answer that you will be nicer to Caprioli, you are admitting that you will supply a greater quantity of niceness to the person who pays you more to be nice. You have found the law of supply in your behavior. Again, you are nicer to those persons who pay you more (in the currency of niceness) to be nice.

THINK ABOUT IT

Do you think that when it comes to the quantity supplied of niceness, most people behave in a manner consistent with the law of supply?

Quantity supplied refers to the number of units of a good produced and offered for sale at a specific price. Let's say that a seller will produce and offer to sell five hamburgers when the price is \$2 each. Five is the quantity supplied at this price. As you work your way through this chapter, you will see why it is important to know the difference between supply and quantity supplied.

The Law of Supply in Numbers and Pictures

We can represent the law of supply in numbers, just as we did with the law of demand. The law of supply states that as price rises, quantity supplied rises. Exhibit 5-1(a) shows such a relationship. As the price goes up from \$1 to \$2 to \$3 to \$4, the quantity supplied goes up from 10 to 20 to 30 to

quantity supplied

The number of units of a good produced and offered for sale at a specific price.

Why All the Reality TV Shows?

In 1992, MTV launched a program called *The Real World*. Seven young people from across the country came together in an apartment in New York City. In 2000, CBS launched a show called *Survivor*. The show placed people on an island and then watched as they tried to “outwit, outplay, and outlast” each other for a prize of \$1 million.

Both *The Real World* and *Survivor* were reality TV shows. After *Survivor*, it wasn’t long before television became deluged with reality shows. In other words, the *supply* of reality shows increased. We will learn in this chapter that one of the factors that can increase supply is the number of sellers. In other words, the greater the number of sellers of a good, the larger the supply of that good. The number of sellers does not increase for no reason; something acts as a catalyst, pushing upward the number of sellers. That thing is profit, which is closely tied to

success. The immense popularity of CBS’s *Survivor*—as evidenced in its high television ratings—meant that CBS could sell commercial time on the show for huge sums of money, in the process earning high profits.

“Of all seven shows that could be labeled phenomenal hits in the last four years, all but one . . . have been reality shows.”

—BILL ARTER, *NEW YORK TIMES*,
MAY 19, 2003

Soon not only was CBS airing more reality shows, but NBC and ABC quickly came out with reality shows of their own. After all, everyone wanted to earn big profits. Over time, other reality shows hit the air waves: *For Love of Money*, *Fear Factor*, *Meet My Folks*, *The Restaurant*, *Average Joe*, *Paradise Hotel*, *The Amazing Race*, *Big Brother*, *The Apprentice*, *The Bachelor*, *The Bachelorette*, *Tommy Lee Goes to College*, and many more. In 2004, four years after the first *Survivor*, some reality shows were earning big profits for their networks. For example, a 30-second spot on *Survivor* was selling for \$327,000 and earning CBS an annual profit of \$73 million. A



30-second spot on *American Idol*, considered a reality show, was being sold for \$414,700 and was earning its company, Fox, \$260 million in profit (for the year).

When people wonder where all the reality TV shows are coming from, they are really asking, “What caused the increase in the supply of reality shows?” The answer is that supply increases as the number of sellers (of a good or service) increases. So, what increases the number of sellers of a good or service? The answer is the chance to earn big profits. In short, money.

THINK ABOUT IT

One lesson to be learned from the history of reality shows appearing on television is that success is copied. *Survivor* was successful and so it was copied. What other successful products can you think of that have been copied?

supply schedule

A numerical chart illustrating the law of supply.

supply curve

A graph that shows the amount of a good sellers are willing and able to sell at various prices.

40. A numerical chart like this one that illustrates the law of supply is called a **supply schedule**.

We can also show the law of supply in picture form by plotting the data in the supply schedule, as in Exhibit 5-1(b). Point A is the first combination of price and quantity sup-

plied from the supply schedule, with a price of \$1 and a quantity supplied of 10. Point B represents a price of \$2 and a quantity supplied of 20; Point C, a price of \$3 and a quantity supplied of 30; and Point D, a price of \$4 and a quantity supplied of 40. Connecting points A through D creates a

supply curve, a line that slopes upward (from left to right) and shows the amount of a good sellers are willing and able to sell at various prices. The upward-sloping supply curve in Exhibit 5-1(b) is the graphic representation of the law of supply.

A Vertical Supply Curve

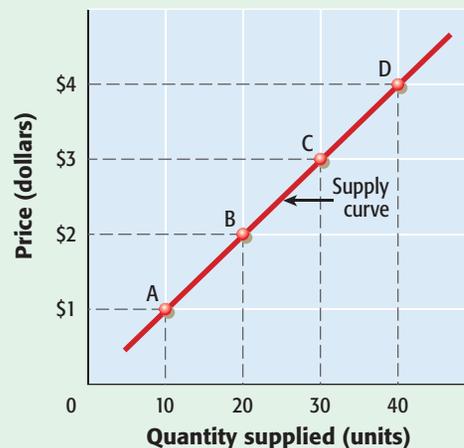
The law of supply, which holds that as price rises, quantity supplied rises, does not hold true for all goods; nor does it hold true over all time periods. First, it does not hold for goods that cannot be produced any longer, such as Stradivarius violins. These violins were made by Antonio Stradivari more than 250 years ago. It is impossible for an additional Stradivarius violin to be produced today, because Stradivari died in 1737. No matter how high the price goes, the quantity supplied cannot increase to more than the total number of Stradivarius violins that currently exist. Thus, the supply curve of Stradivarius violins is not upward sloping but vertical, straight up and down, as shown in Exhibit 5-2(a).

In another example, a theater in St. Louis is sold out for tonight's play. Increasing ticket prices from \$40 to \$50 would not create additional seats tonight, because time does not allow enlarging the theater to add more seats. For tonight's performance, the supply curve of theater seats is vertical, as illustrated in Exhibit 5-2(b).

EXHIBIT 5-1 Supply Schedule and Supply Curve

Price (dollars)	Quantity supplied (units)
\$1	10
2	20
3	30
4	40

(a)



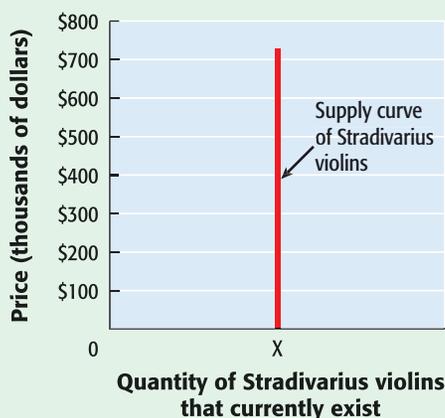
(b)

▲ (a) A supply schedule for a good. Notice that as price increases, quantity supplied increases. (b) Plotting the four combinations of price and quantity supplied from part (a), and connecting the points, yields a supply curve.

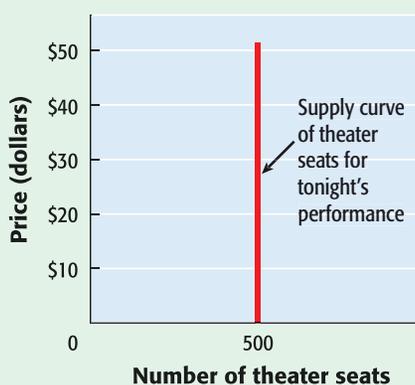
A Firm's Supply Curve and a Market Supply Curve

Most of the goods supplied in the United States are supplied by business firms. For example, computers are supplied by Dell, Hewlett-Packard, and so on. A firm's supply curve is different from a market supply curve. A firm's supply curve is what it sounds like: it is the supply curve for a particular firm. A market supply curve is the sum of all firms' supply curves.

EXHIBIT 5-2 Supply Curves When No More Can Ever Be Produced or There Is No Time to Produce More

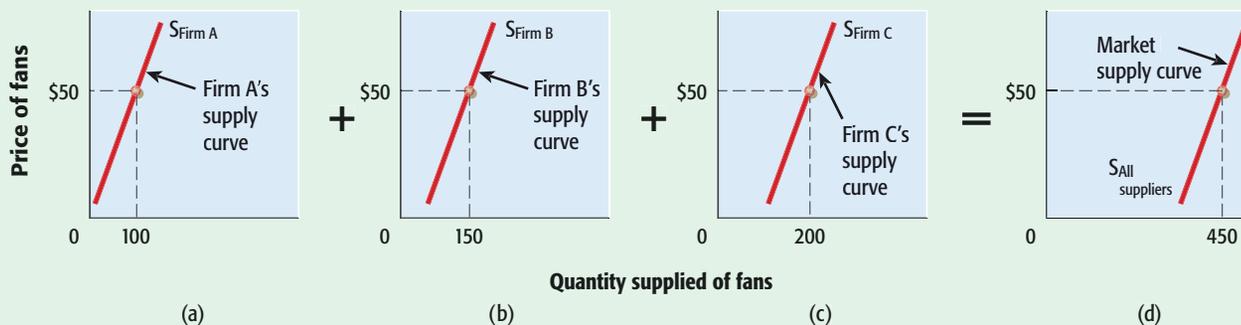


(a)



(b)

◀ When additional units cannot be produced or there is no time to produce more, the supply curve is vertical.



▲ In parts (a) through (c) we show the supply curve for firms A, B, and C, respectively. The market supply curve, shown in part (d), is simply the sum of the firms' supply curves. Stated differently, we know that at a price of \$50 per fan, firm A's quantity supplied of fans is 100, firm B's is 150, and firm C's is 200. It follows that all three firms together will offer 450 fans at a price of \$50 per fan. This point is identified on the market supply curve in part (d).

EXAMPLE: Suppose that only three suppliers of fans exist in the whole world: firm A, firm B, and firm C. At a price of \$50 a fan, quantity supplied is 100 for firm A, 150 for firm B, and 200 for firm C. As a result, the *market supply curve* would have a point representing a price of \$50 per fan and a market quantity supplied of 450 fans (100 + 150 + 200).

To see this concept graphically, look at Exhibit 5-3 above. In parts (a) through (c) you see the supply curves for firms A, B, and C, respectively. (To keep things simple, we identify only one point on the supply curve for each firm.) Now look at part (d). Here you can see the *market supply curve*, which is the combination of all the individual market supply curves. ♦

SECTION

1

ASSESSMENT

Defining Terms

- Define:
 - supply
 - law of supply
 - direct relationship
 - quantity supplied
 - supply curve
 - supply schedule
- Use the term *quantity supplied* correctly in a sentence. Use the word *supply* correctly in a sentence.

Reviewing Facts and Concepts

- State the law of supply.
 - Explain the direct relationship between the price of a good

and the quantity supplied.

- Do all supply curves graphically represent the law of supply? Explain your answer.
- Identify a good that has an upward-sloping supply curve. Identify a good that has a vertical supply curve.

Critical Thinking

- Three months ago the price of a good was \$4, and the quantity supplied was 200 units. Today the price is \$6, and the quantity supplied is 400 units. Did the quan-

tity supplied rise because the price increased, or did the price rise because the quantity supplied increased?

Applying Economic Concepts

- Suppose three McDonald's restaurants operate in your town, and each pays its employees \$6 per hour. If McDonald's started paying \$9 per hour to its employees, would more, fewer, or the same number of people want to work for McDonald's, according to the law of supply?