

ACTIVITY 19.1

Prices for Spices: Then and Now

Before we can compare prices from long ago with prices today, we first need to determine how much spices cost today. For homework, you will complete the data retrieval chart below for three spices: cinnamon, cloves, and black pepper. You can find the data at your local grocery store or on the Internet at <http://www.netgrocer.com/>. If you use NetGrocer, type the name of each spice in the search tool. NetGrocer carries several different brands of each of these spices. Complete the chart using the first three brands returned by the search tool. A sample answer is shown for cinnamon.

Ground Cinnamon				
Brand	Price	Ounces in container	Price per ounce	Price per pound (price/oz. x 16)
Spice Classics™ Ground Cinnamon	\$1.29	3.37 oz.	\$ 0.38	\$ 6.08
Average (of price per pound)				

Whole Cloves				
Brand	Price	Ounces in container	Price per ounce	Price per pound (price/oz. x 16)
Average (of price per pound)				

ACTIVITY 19.1, CONTINUED

Ground Black Pepper				
Brand	Price	Ounces in container	Price per ounce	Price per pound (price/oz. x 16)
Average (of price per pound)				

To compare today's prices with those from the past, we need to use something other than today's dollars. A workman in England in 1439 did not use U.S. dollars to buy his cinnamon! One way to make such a comparison is to ask to find out how long the English workman would have had to work to pay for a pound of cinnamon. Historian John Munro has calculated wages for an average craftsman in England in 1439. He found that an average workman would have had to work two days to buy a pound of black pepper, three days to buy a pound of cinnamon, and 4.5 days to buy a pound of cloves. How many days would the average worker in the United States have to work to afford the same amounts of the same spices today? Assume that today's average daily wage is \$170.⁴

Comparing Today's Prices with Prices in 1439			
	Avg. Price per pound (today)	Number of workdays needed to buy one pound today (Avg. price per pound ÷ \$170)	Number of workdays need to buy one pound in 1439
Black pepper			2 days
Cinnamon			3 days
Cloves			4.5 days

⁴ Updated values can be found at US Bureau of Labor Statistics: http://www.bls.gov/oes/current/oes_nat.htm#00-0000

ACTIVITY 19.1, CONTINUED**QUESTIONS:**

1. In terms of the number of workdays it takes to buy spices, has the price of black pepper increased or decreased? _____
2. In terms of the number of workdays it takes to buy spices, has the price of whole cloves increased or decreased? _____
3. In terms of the number of workdays it takes to buy spices, has the price of cinnamon increased or decreased? _____
4. In 1439, which spice was cheapest? _____
5. Today, which spice is cheapest? _____

ACTIVITY 19.2

So What's Up with Spices?

Have you ever given much thought to the cinnamon on your toast in the morning? What about the black pepper on your family's dining room table? Next time you are in your favorite fast-food restaurant, ask for some black pepper. You will likely be given all you want in those little break-open pepper packets. Spices such as pepper and cinnamon are the fruit, seeds, bark, or roots of a plant. Herbs, such as oregano and rosemary, are the leaves of the plant. Spices such as cinnamon and black pepper are very common. But 500 or 600 years ago, spices were a lot "hotter" than they are today. In fact, at various times in history, spices were worth more than their weight in gold or silver. Spices were so valuable that people were willing to risk their lives on dangerous expeditions to find these valuable commodities.

At times, spices have been used like money. In the 5th century C.E., pepper was used as a medium of exchange and traded for other goods and services. In ancient Rome, merchants could pay their rent in peppercorns. The Romans had a great appetite for spices. In 408 C.E., Rome was about to be invaded by an army led by Alaric the Visigoth. To keep him from invading, Roman senators gave him 3,000 pounds of pepper! The Romans enjoyed cinnamon leaves (malabathrum) so much they were willing to pay six times the average Roman workers monthly salary for one pound! Pliny the Elder estimated that Rome's annual trade deficit with India and China (for spices alone) was equal to the value of 10 tons of gold. Egyptian Pharaohs were often buried with peppercorns in their noses to show their wealth to those in the afterlife.

Why were spices so valuable hundreds and thousands of years ago? Many believed that spices were valuable for masking the taste of rotten meat. The theory goes that it was difficult to preserve meat, so spices were used to make rotten meat edible. Historian Tom Standage believes this would have been a "very odd thing to do, given [spices'] expense." Standage argues that anyone who could have afforded spices could have afforded good meat—the spices were the most expensive ingredient by far. "With their richly spiced food," Standage writes, "the wealthy literally had expensive tastes." Standage believes about it is more likely that spices were valued to cover up meat's saltiness because salt curing was the primary method of preserving meat.

Spices were expensive imported goods. Spices such as cinnamon, cloves, and black pepper were native to the so-called Spice Islands (modern Indonesia and

parts of New Guinea). Spices could only be grown in tropical climates with lots of rain, so they could not be grown in Europe. Travel to spice-growing regions required mostly land travel, which was very slow and often dangerous. The long travel made spices difficult for Europeans to get. Entrepreneurs found spices desirable to ship because they were both lightweight and extremely valuable. Many groups tried to control the spice trade: first, beginning in the 7th century C.E., spices were controlled by Muslim traders; later, the spice trade was controlled by Genoese descendants of Marco Polo; and then the Portuguese and the Dutch.

Europeans who could afford to buy and use spices were showing their neighbors how rich they were. Cookbooks from the 1400s show us that spices were used in more than three-quarters of all recipes and that some families in England spent as much on spices as on the meat they used them on.

Spices were also used in religious ceremonies. Frankincense and other spices were burned in medieval churches. Spices' aromas were thought to affect health and mood, creating a refined environment for those who burned them, which explains why they were frequently used in religious services and ceremonies.

QUESTIONS:

1. How do spices differ from herbs? Why were they difficult for Europeans to get?
2. Why is the theory that Europeans used spices on rotten meat no longer believed?
3. Name three reasons spices were highly demanded.

ACTIVITY 19.3

Determining the Market Price for Spices

Spices are much less expensive today than 500 years ago. Today, the average worker can earn enough money to buy a pound of cinnamon in 45 minutes. In 1439, the average worker needed three days of labor to earn enough to buy that same pound of cinnamon! Why has the price of spices such as cinnamon fallen so dramatically?

Both buyers and sellers are responsible for determining market prices. Market demand represents the desires of consumers. If the demand for cinnamon increases, the market price of cinnamon is pushed up in the market. If market demand decreases, the market price falls. But this is only half the story. Cinnamon suppliers (businesses) are responsible for the market supply. Market supply represents the willingness of producers to bring a good to market. If the supply of cinnamon increases, it pushes down the market price in the market. If supply decreases, the market price rises. Let's use the cinnamon market and prices from 1439 as an example to see how changes in demand and supply affect the price of cinnamon.

Use the following scenarios from history to complete the chart below. Consider each scenario that follows. Did the event described affect the supply of spices or the demand? According to the event described, was there an increase or decrease in supply or demand for cinnamon? Also indicate what affect this change (in supply or demand) will have on the market price for spices. Recall the factors that can shift market demand and market supply:

<p>Supply Changes with</p> <ol style="list-style-type: none"> 1. Number of producers 2. Cost of resources needed to make the good 3. Improved technology 4. Natural events 	<p>Demand Changes with</p> <ol style="list-style-type: none"> 1. Consumer tastes 2. Number of consumers 3. Increase in consumer income
--	---

ACTIVITY 19.3, CONTINUED

Scenario 1

One reason spices became so popular in medieval Europe was that buyers began to believe that they came directly from the Garden of Eden. Spices were referred to as “splinters of Paradise.” Ancient authorities claimed that cinnamon and ginger were hauled from the Nile River in nets after washing down from the Garden of Eden. Legend had it that the Garden of Eden was perfumed with spices. Ordinary people tried to recreate a piece of the garden by using spices in their home.

Scenario 2

During the 1400s, improvements in sailing technology allowed European sailors to travel on longer and longer journeys. The fast and sturdy caravel (the type of ship Columbus used) was invented. Maps were improved using latitude and longitude, and new tools such as the astrolabe and better compasses improved navigation.

Scenario 3

Spices such as nutmeg and cloves were thought to cure disease. In particular, combinations of powdered cinnamon, cloves, and mace were thought to prevent the Black Death. In Italy, many people walked around carrying bottles of spices for smelling because people thought the plague was spread by bad air. Broth flavored with pepper, ginger, and cloves was believed to prevent disease.

Scenario 4

The Italian states of Genoa and Venice controlled the spice trade until the early 1500s. In 1501, Pedro Cabral from Portugal sailed around Africa to India and brought home many spices. In 1579, English explorer Sir Francis Drake sailed through the Spice Islands and brought back ship-loads of spices to England. In 1602, the Dutch East India Company took over the Spice Islands, including modern Indonesia, and began exporting spices to Europe.

ACTIVITY 19.3, CONTINUED

Scenario 5

Spices were a luxury good that demonstrated wealth. The more spices you used in food and as medicine, the richer you were. Spices were given as gifts, willed to family members after death, and even used as currency. Spices were used in perfumes and as incense in religious ceremonies.

Scenario 6

In 500 C.E., a Greek historian described the Arabs who were the first spice traders. These traders told outlandish stories about collecting cinnamon from caves guarded by winged, bat-like creatures. Arab traders claimed they had to wear full-body armor made from ox skins to protect themselves. Other stories claimed that cinnamon sticks were brought to Arabia by large birds that deposited them in their nests high on a mountain. Traders said that they cut up an ox, which the giant birds carried to their nests. The nests then fell to the ground with the weight of the meat, and then cinnamon sticks could be collected. These stories were told for two reasons: to hide the true location of the spices and to scare off competition.

Scenario 7

With the exploration of the New World (1500–1600), Europeans discovered new, exotic substances, including tobacco. Tobacco, (along with coffee, sugar and tea from other parts of the world) became status symbols because they were new. These soon overtook spices as status symbols. The use of spices for over-flavoring food fell out of fashion, and simpler foods became popular in Europe. By the 1620s, the Dutch controlled the spice trade. But by 1700, the portion of Dutch revenue from spices fell from 75 percent to just 23 percent. The golden age of spices was over.

ACTIVITY 19.3, CONTINUED

Scenario	Affects Supply or Demand?	Affects Market Price?
1		
2		
3		
4		
5		
6		
7		

ACTIVITY 19.4

Why Are Spices (Relatively) Cheap Today?

Spices are much less expensive today than 575 years ago. Today, the average worker can earn enough money to buy a pound of cinnamon spice in 45 minutes. In 1439, the average worker worked more than three days to earn enough to buy a pound of cinnamon. Why has the price of spices fallen so dramatically?

Prices of commodities are determined by the demand for them—the market. Both buyers and sellers are responsible for determining these prices. Market demand is the amount of a product—such as cinnamon—that consumers desire at different prices. The higher the price, the less cinnamon consumers desire. The lower the price, the more cinnamon consumers desire. But this is only half the story. Cinnamon suppliers (businesses) are responsible for the market supply. This is the amount of cinnamon they are willing to provide at different prices. The higher the price, the more cinnamon is supplied. The lower the price, the less cinnamon is supplied. Let's use the cinnamon market and prices from 1439 as an example. First, we'll draw a picture that represents the demand for cinnamon in 1439, and then we'll draw a picture that represents the supply of cinnamon.

First, let's review: Recall that an increase in market demand occurs when consumers are willing to buy more cinnamon at all prices. Several factors can shift market demand:

1. **Consumer tastes:** As we saw with the cinnamon market, if consumers' desire for a product increases, so will demand. The more fashionable a product (e.g., clothing) the greater the demand. This is often the case with electronics or other products. If desire decreases, so too does demand.
2. **Number of consumers:** The more buyers in a market, the higher the demand. If buyers leave a market, demand decreases.
3. **Consumer income:** As consumers earn more (overall), then they tend to spend more, increasing demand. If consumer income decreases, demand decreases as well.

Also recall that an increase in market supply occurs when producers are willing to supply more cinnamon at all prices. Several factors can shift market supply:

1. **Number of producers.** The more cinnamon suppliers, the greater the market supply of cinnamon. Fewer suppliers means less market supply of cinnamon.

ACTIVITY 19.4, CONTINUED

2. Cost of resources. The cost of resources (e.g., ships to transport cinnamon, wages paid to sailors, etc.) needed to produce cinnamon affects supply. If costs increase, less cinnamon can be supplied and market supply decreases. On the other hand, if these costs decrease, market supply will increase.
3. Changes in technology. Improved technology (the tools, machines, etc. needed to produce cinnamon) can mean an increase in market supply of cinnamon. For example, improved transportation (e.g., faster ships) would mean more cinnamon could be supplied leading to an increase in the market supply of cinnamon.
4. Natural events. Events that occur in nature such as floods, freezing weather, or hurricanes can disrupt supply. For example, a freeze in the orange groves of Florida will mean a lower supply of oranges.

I. DEMAND FOR CINNAMON IN 1439

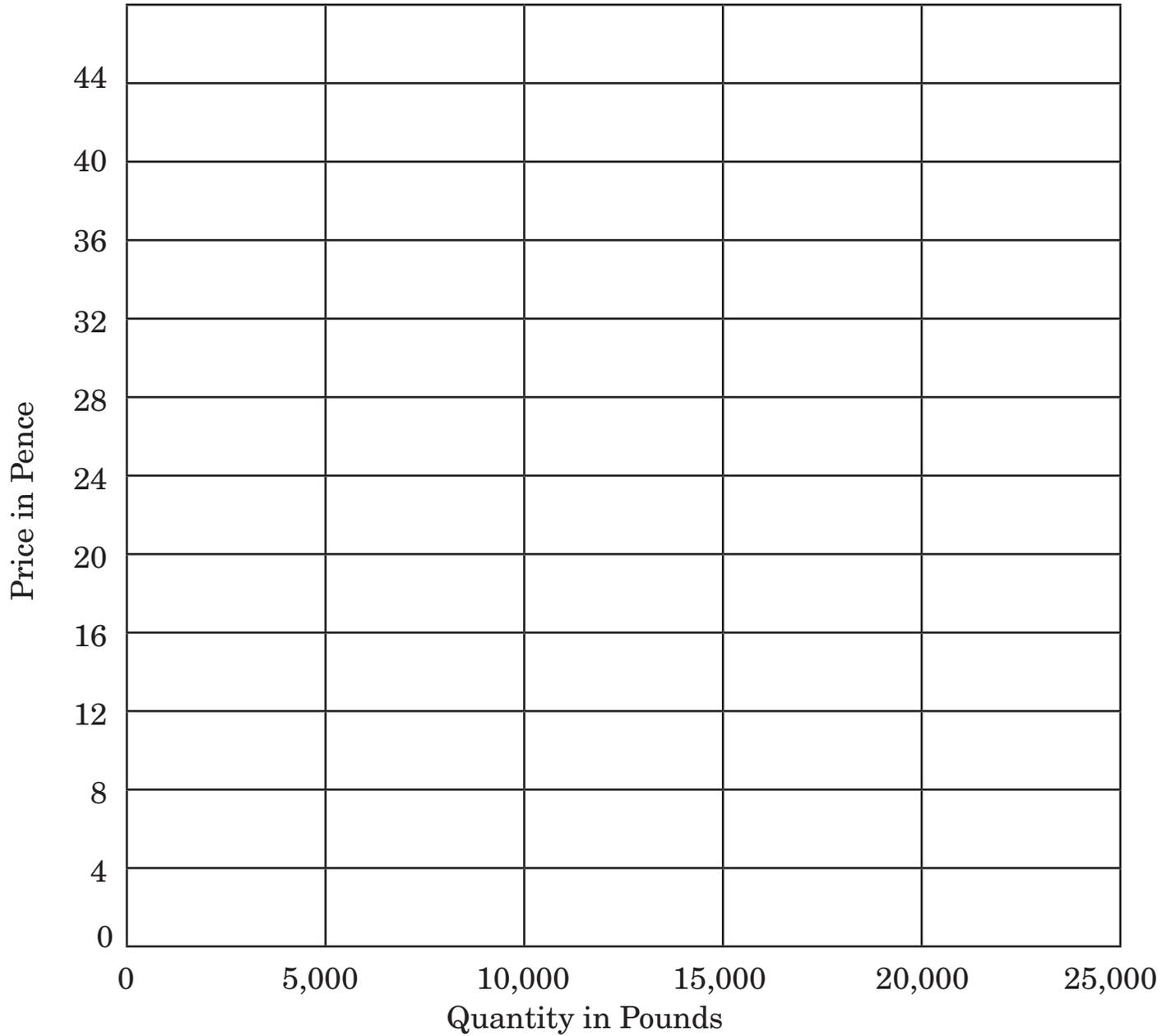
The table below is called a demand schedule. It shows the relationship between price and how many pounds of cinnamon English consumers desired (what economists call the quantity demanded). Note how as the price increases, less quantity is demanded! Using the demand schedule, plot out each point on the blank graph below, and connect each point. Label the line *Demand for cinnamon in 1439*.

Demand Schedule for Cinnamon (1439)

Price (in pence, the English currency of 1439)	32	28	24	20	16
Quantity demanded (in pounds)	0	5,000	10,000	15,000	20,000

ACTIVITY 19.4, CONTINUED

Market in Cinnamon



ACTIVITY 19.4, CONTINUED

II. SUPPLY FOR CINNAMON IN 1439

Next, we'll draw a picture of the supply of cinnamon in 1439. Plot out each point on *the Market in Cinnamon* graph and then draw a line to connect each point. Note how as the price increases, more quantity is supplied! Label the line *Supply of cinnamon in 1439*.

Supply Schedule for Cinnamon (1439)

Price (in pence, the English currency of 1439)	32	28	24	20	16
Quantity supplied (in pounds)	20,000	15,000	10,000	5,000	0

If you look closely at the *Market in Cinnamon* graph you have drawn, you will see that the *Demand for cinnamon* line and the *Supply of cinnamon* lines intersect.

1. What is the price associated with the point where these two lines intersect?

2. What do you notice about the quantity demanded and quantity supplied at this price? _____

This price is called **market price** for cinnamon. This is the price where the quantity of cinnamon consumers desire is equal to the amount of cinnamon that producers will provide.

ACTIVITY 19.4, CONTINUED

III. DEMAND FOR CINNAMON IN 1440

What happens to this market price if consumers suddenly change their minds and want more cinnamon at every price? For example, what if, in 1440, people begin to believe that cinnamon is the new “wonder drug”? We would say the demand for cinnamon has increased. Let’s look at a new picture of the cinnamon market, if this were to happen.

Use the new demand schedule below and plot out each point on the *Market in Cinnamon* graph and then connect each point. Label the new line you create *Demand for cinnamon in 1440*.

Demand Schedule for Cinnamon (1440)

Price (in pence)	40	36	32	28	24
Quantity demanded (in pounds)	0	5,000	10,000	15,000	20,000

1. What has happened to the market price for cinnamon?

2. Why do you think this happened?

3. Generally speaking, what effect would an increase in market demand have on market price?

4. Generally speaking, what effect would a decrease in market demand have on market price?

5. Predict what would happen to market price if the *supply* of cinnamon increased.
