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13

Building the Price Foundation

LEARNING OBJECTIVES

After reading this chapter you should be able to:

LO 13-1

Identify the elements that make up a price.

LO 13-2

Recognize the objectives a firm has in setting prices and the constraints that restrict the range of prices a firm can charge.

LO 13-3

Explain what a demand curve is and the role of revenues in pricing decisions.

LO 13-4

Describe what price elasticity of demand means to a manager facing a pricing decision.

LO 13-5

Explain the role of costs in pricing decisions and describe how various combinations of price, fixed cost, and unit variable cost affect a firm's break-even point.

Vizio, Inc.—Delivering Beautifully SMART Products at a Great Value

Can you name North America's #1 Smart TV company? Stumped? It's VIZIO, Inc., an entrepreneurial, Irvine, California-based company with a bold agenda. "Our goal is to be the next Sony in 20 to 30 years," says William Wang, VIZIO's co-founder and chief executive officer, who was born in Taiwan and immigrated to the United States at age 13.

In 2002, Wang was struck by an ad for a \$10,000 flat-panel HDTV set and immediately saw an opportunity. Instead of marketing these sets as luxury items, Wang thought he could make and market an HDTV that would be affordable for the average customer.

Like many entrepreneurs, he borrowed money from friends and family and mortgaged his home. Within a year, he formed a company that is now known as VIZIO, Inc. and delivered the company's first VIZIO HDTV to Costco for distribution through that company's stores. VIZIO HDTVs are now sold through Costco, Walmart, BJ's Wholesale, Best Buy, Sam's Club, and Target stores nationwide, along with authorized online partners such as Amazon. The company has sold more than 38 million HDTV units shipped since 2002.

VIZIO's ability to deliver affordable HDTVs to the average customer is based on a novel strategy. VIZIO didn't invest in expensive manufacturing facilities but instead relied on contract manufacturers to build its products. Product development and marketing specialists in the United States handle product design and marketing. "The whole goal is to ensure that we have the right product at the right time and the right price and really drive a seamless end-to-end value chain," says a company spokesperson.

"VIZIO HDTVs are more popular and in greater demand than ever," adds Laynie Newsome, VIZIO's co-founder and chief sales officer. "Consumers want to save money without sacrificing quality or technology." Matt McRae, VIZIO's chief technology officer, adds that

VIZIO's strategy is to make affordable products with innovative features, saying, "We're far from the cheapest brand on the market at present. Everybody deserves the latest technology, too."

VIZIO's visionary commitment to delivering high-quality technology at a great value to consumers is evident by its pioneering role in launching Smart TVs in 2010. Smart TV enables viewers to watch content from the Internet directly on their TV, for a more interactive TV watching experience. VIZIO has sold more than 3.2 million Smart TVs since 2010, making it North America's #1 Smart TV company.

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VIZIO Internet Apps Plus™



YouTube: Second-Screen Experience

VIZIO Internet Apps Plus™



Full-Screen Apps Window

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VIDEO 13-1

VIZIO

kerin.tv/13e/v13-1

VIZIO's powerful and profitable price-value position clearly resonates with consumers. VIZIO is frequently ranked "Highest in Customer Satisfaction" with HDTVs by J.D. Power and Associates and listed among the largest privately held companies in the United States. Not bad for a company with about 400 employees and just 14 years old!¹

Welcome to the fascinating—and intense—world of pricing. This chapter describes the important factors organizations consider when they go about setting prices for their products and services.

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NATURE AND IMPORTANCE OF PRICE

LO 13-1

Identify the elements that make up a price.

The price paid for products and services goes by many names. You pay *tuition* for your education, *rent* for an apartment, *interest* on a bank credit card, and a *premium* for car insurance. Your dentist or physician charges you a *fee*, a professional or social organization charges *dues*, and airlines charge a *fare*.

In business, an executive is given a *salary*, a salesperson receives a *commission*, and a worker is paid a *wage*. And what you pay for clothes or a haircut is termed a *price*.

Among all marketing and operations factors in a business firm, price has a unique role. It is the place where all other business decisions come together. The price must be “right”—in the sense that customers must be willing to pay it; it must generate enough sales dollars to pay for the cost of developing, producing, and marketing the product; *and* it must earn a profit for the company. Small changes in price can have big effects on both the number of units sold and company profit.

What Is a Price?



Are you interested in trading in your 2008 Mini-Cooper for a 2017 Bugatti Chiron, the world's most expensive car? Read the text to find out the true cost of purchasing a new car.

Credit: Left: Source: Bugatti; Right: ©Drive Images/Alamy

From a marketing viewpoint, **price** is the money or other considerations (including other products and services) exchanged for the ownership or use of a product or service. For example, Wilkinson Sword has exchanged some of its knives for advertising used to promote its razor blades. This practice of exchanging products and services for other products and services rather than for money is called **barter**. Barter transactions account for billions of dollars annually in domestic and international trade. In the United States alone, \$12 billion of products and services are traded every year without any money changing hands.²

The Price Equation

For most products, money is exchanged. However, the amount paid is not always the same as the list, or quoted, price because of discounts, allowances, and extra fees. One new 21st-century pricing tactic involves using “special fees” and “surcharges.” This practice is driven by consumers’ zeal for low prices combined with the ease of making price comparisons on the Internet. Buyers are more willing to pay extra fees than a higher list price, so sellers use add-on charges as a way of having the consumer pay more without raising the list price.

All the factors that increase or decrease the final price of an offering help construct a “price equation,” which is shown for a few products in **Figure 13–1**. These are key considerations if you want to buy a 2017 Bugatti Chiron.³ This all-wheel car accelerates from 0 to 60 mph in just 2.5 seconds. With its 1,500-horsepower engine, top speed is 288 mph! The aerodynamic body is made out of carbon fiber to safely handle the speed.

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ITEM PURCHASED	PRICE EQUATION			
	PRICE	= LIST PRICE	– INCENTIVES AND ALLOWANCES	+ EXTRA FEES
New car bought by an individual	Final price	= List price	– Rebate Cash discount Old car trade-in	+ Financing charges Special accessories Destination charges
Term in college bought by a student	Tuition	= Published tuition	– Scholarship Other financial aid Discounts for number of credits taken	+ Special activity fees Room and meals Books, computer Student loan interest (eventually)
Merchandise bought from a wholesaler by a retailer	Invoice price	= List price	– Quantity discount Cash discount Seasonal discount Functional or trade discount	+ Late payment penalty

Figure 13–1 The “price” a buyer pays can take different names depending on what is purchased, and it can change depending on the price equation.

Calculating a Final Price

The Bugatti Chiron U.S. list price is a cool \$2.5 million, give or take. But the dealer has agreed to give you a trade-in allowance of \$7,000 based on the *Kelley Blue Book* (www.kbb.com) trade-in value for your 2008 Mini-Cooper four-door sedan that is in good condition. And your great-uncle has offered to give you a 5-year interest-free loan. Other charges include: (1) an import duty of \$50,000; (2) a gas-guzzler tax of \$7,000; (3) a 7.5 percent sales tax of \$229,125; (4) an auto registration fee of \$5,000 to the state; and (5) a \$50,000 destination charge to ship the car to you from France.

Applying the price equation shown in **Figure 13–1** to your Bugatti Chiron purchase, your final price is:

$$\begin{aligned}
 \text{Final price} &= [\text{List price}] - [\text{Allowances}] + [\text{Extra fees}] \\
 &= [\$2,500,000] - [\$7,000] \\
 &\quad + [\$50,000 + \$7,000 + \$229,125 + \$5,000 + \$50,000] \\
 &= \$2,500,000 - \$7,000 + \$341,125 \\
 &= \$2,834,125
 \end{aligned}$$

Note that your final price is \$334,125 more than the list price! Are you still interested in the 2017 Bugatti Chiron? If so, put yourself on the waiting list.

Price as an Indicator of Value

From a consumer's standpoint, price is often used to indicate value when it is compared with perceived benefits such as the quality or durability of a product or service. Specifically, **value** is the ratio of perceived benefits to price, or⁴

$$\text{Value} = \frac{\text{Perceived benefits}}{\text{Price}}$$

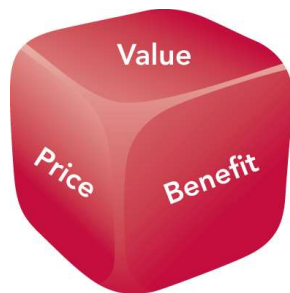
This relationship shows that for a given price, as perceived benefits increase, value increases. Not surprisingly, if you're used to paying \$7.99 for a medium frozen cheese pizza, wouldn't a large one at the same price be more valuable? Conversely, for a given price, value decreases when perceived benefits decrease. The reduced contents in many consumer packaged products sold in supermarkets without a comparable drop in price decreases value to consumers.

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Using Value Pricing

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Creative marketers engage in **value pricing**, the practice of simultaneously increasing product and service benefits while maintaining or decreasing price. For some products, price influences consumers' perception of overall quality and ultimately its value to them.⁵ In a survey of home furnishing buyers, 84 percent agreed with the statement: "The higher the price, the higher the quality."⁶ For example, Kohler introduced a walk-in bathtub that is safer for children and the elderly. Although priced higher than conventional step-in bathtubs, the product is successful because buyers are willing to pay a bit more for what they perceive as the value of extra safety.



In this context, "value" involves the judgment by a consumer of the worth of a product or service relative to substitutes that satisfy the same need. Through the process of comparing the costs and benefits of substitute items, a "reference value" emerges. For many

consumers, the posted airfares of competing airlines serving the same cities become reference values. Based on airfare alone, Spirit Airlines usually offers the lowest price. But value assessments also include benefits received at a given price. Read the Marketing Matters box and decide whether or not Spirit Airlines offers value pricing.⁷

Marketing Matters

customer
value

Does Spirit Airlines Engage in Value Pricing? For Some Yes, for Others No

Does Spirit Airlines engage in value pricing? Well, it depends on what benefits certain passengers seek and the price they are willing to pay.

The U.S. Department of Transportation reports that Spirit Airlines fares are, on average, 40 percent lower than other airlines for the same trip. What benefit(s) do passengers get for this low fare? A seat that will not recline on an airplane that will get you to your intended destination faster than a car or bus. Do you want a boarding pass, a beverage, room in an overhead bin for luggage, or an assigned or aisle seat? You will pay separately for these benefits which increase your price to get to your destination.

So, does Spirit Airlines engage in value pricing? The answer is yes for those who wish to get to their destination as cheaply as currently possible. For others, no. They expect to get more (benefits) for what they give (fare). Not surprising, Spirit Airlines consistently ranks highest among U.S. airlines for complaints (e.g., on-time, performance, legroom), except fares. In response to passenger complaints, the company's CEO summed up his view on value pricing, saying Spirit Airlines won't "add cost for things that most customers don't value as much as our low fares just to reduce the complaints of a few customers. Doing that would raise prices for everyone, compromising our commitment to what our customers have continuously told us they truly value—the lowest possible price."



© Sam Pollitt/Alamy

Price in the Marketing Mix

Pricing is a critical decision made by a marketing executive because price has a direct effect on a firm's profits. This is apparent from a firm's **profit equation**, where:

$$\begin{aligned}\text{Profit} &= \text{Total revenue} - \text{Total cost} \\ &= (\text{Unit price} \times \text{Quantity sold}) - (\text{Fixed cost} + \text{Variable cost})\end{aligned}$$

What makes this relationship even more complicated is that price affects the quantity sold, as illustrated with demand curves later in this chapter. Furthermore, since the quantity sold usually affects a firm's costs because of efficiency of production, price also indirectly affects costs. Thus, pricing decisions influence both total revenue (sales) and total cost, which makes pricing one of the most important decisions marketing executives face.

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The importance of price in the marketing mix necessitates an understanding of six major steps in the process organizations go through in setting prices (see **Figure 13–2**):

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1. Identify pricing objectives and constraints.
2. Estimate demand and revenue.
3. Determine cost, volume, and profit relationships.
4. Select an approximate price level.
5. Set list or quoted price.
6. Make special adjustments to list or quoted price.

The first three steps are covered in this chapter, and the last three are discussed in **Chapter 14**.

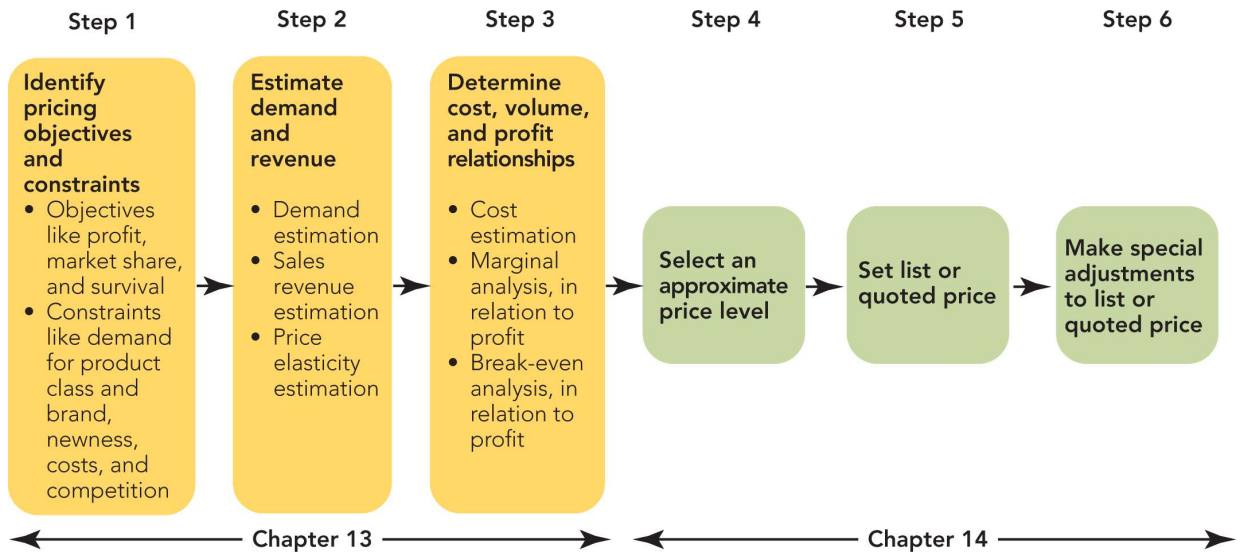


Figure 13–2 The six steps in setting price. The first three steps are covered in this chapter, and the last three steps are covered in [Chapter 14](#).

learning review

- 13-1.** What is price?
- 13-2.** What factors impact the list price to determine the final price?
- 13-3.** What is the profit equation?

STEP 1: IDENTIFY PRICING OBJECTIVES AND CONSTRAINTS

With such a variety of alternative pricing strategies available, a marketing manager must consider the pricing objectives and constraints that will narrow the range of choices. While pricing objectives frequently reflect corporate goals, pricing constraints often relate to conditions existing in the marketplace.

Identifying Pricing Objectives

Pricing objectives involve specifying the role of price in an organization's marketing and strategic plans. To the extent possible, these pricing objectives are carried to lower

levels in the organization, such as in setting objectives for marketing managers

LO 13-2

Recognize the objectives a firm has in setting prices and the constraints that restrict the range of prices a firm can charge.

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responsible for an individual brand. These objectives may change depending on the financial position of the company as a whole, the success of its products, or the segments in which it is doing business. **Chapter 2** discussed broad objectives that an organization may pursue, which tie directly to the organization's pricing objectives covered next. Page 354

Profit

Three different objectives relate to a firm's profit, which is often measured in terms of return on investment (ROI) or return on assets (ROA). These objectives have different implications for pricing strategy. One objective is *managing for long-run profits*, in which companies—such as many Japanese car or HDTV manufacturers—give up immediate profit by developing quality products to penetrate competitive markets over the long term. Products are priced relatively low compared to their cost to develop, but the firm expects to make greater profits later because of its high market share.

A *maximizing current profit* objective, such as for a quarter or year, is common in many firms because the targets can be set and performance measured quickly. American firms are sometimes criticized for this short-run orientation. A *target return* objective occurs when a firm sets a profit goal (such as 20 percent for pretax ROI), usually determined by its board of directors.

Sales Revenue

Given that a firm's profit is high enough for it to remain in business, an objective may be to increase sales revenue, which can lead to increases in market share and profit.

Objectives related to dollar sales revenue or unit sales have the advantage of being translated easily into meaningful targets for marketing managers responsible for a product line or brand. However, while cutting the price on one product in a firm's line may increase its sales revenue, it may also reduce the sales revenue of related products.

Market Share

Market share is the ratio of the firm's sales revenues or unit sales to those of the industry (competitors plus the firm itself). Companies often pursue a market share objective when industry sales are relatively flat or declining. In the late 1990s, Boeing cut prices drastically to try to maintain its 60 percent share of the commercial airline market to compete with Airbus. As a result, it encountered huge losses. Although increased market share is a primary goal of some firms, others see it as a means to other ends: increasing sales and profits.

Unit Volume

Many firms use *unit volume*, the quantity produced or sold, as a pricing objective. These firms often sell multiple products at very different prices and need to match the unit volume demanded by customers with price and production capacity. Using unit volume as an objective can be counterproductive if a volume objective is achieved, say, by drastic price cutting that drives down profit.

Survival



Companies in financial distress use pricing as a means to survival. Survival was the pricing objective for Radio-Shack when it faced bankruptcy.

© Victor J. Blue/Bloomberg via Getty Images

In some instances, profits, sales, and market share are less important objectives of the firm than mere survival. For example, RadioShack, an electronics retail chain, faced survival problems because it couldn't compete with the prices offered by other retailers. The company enacted price matching programs and promoted large discounts on its merchandise to raise cash and

hopefully stave off bankruptcy. These efforts failed and RadioShack declared bankruptcy in 2015.

Social Responsibility

A firm may forgo higher profit on sales and follow a pricing objective that recognizes its obligations to customers and society in general. For example, Gerber supplies a specially formulated product free of charge to children who cannot tolerate foods containing cow's milk.

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Identifying Pricing Constraints

Factors that limit the range of prices a firm may set are referred to as **pricing constraints**. Consumer demand for the product clearly affects the price that can be charged. Other constraints on price vary from factors within the organization to competitive factors outside the organization. Legal and regulatory constraints on pricing are discussed in **Chapter 14**.



The price for a specific brand—like the Toyota Camry V6 here—is also affected by general demand for its product class (cars) and product group (family sedans), as discussed in the text.

© izmocars/Izmo/Corbis

Demand for the Product Class, Product, and Brand

The number of potential buyers for the product class (cars), product group (family sedans), and specific brand (Toyota Camry V6) clearly affects the price a seller can charge. Likewise, whether the item is a luxury—like the

Bugatti Chiron—or a necessity—like bread and a roof over your head—also affects the price that can be charged. Generally, the greater the demand for a product, the higher the price that can be set. For example, the New York Mets have set different ticket prices for their games based on the appeal of their opponent—prices are higher when they play the New York Yankees and lower when they play the Pittsburgh Pirates.⁸

Newness of the Product: Stage in the Product Life Cycle

The newer a product and the earlier it is in its life cycle, the higher the price that can usually be charged. Are you willing to spend \$9,999 for an LG 55-inch 3D OLED HD Smart TV? The high initial price is possible because of patents and limited competition early in its product life cycle. By the time you read this, the price probably will be lower.

Sometimes—when nostalgia or fad factors come into play—prices may rise later in the product’s life cycle. For example, collectibles can experience skyrocketing prices. Recently, consumers on eBay paid \$250 for a Zip the Cat Beanie Baby (with black paws), \$200 for a 2001 Ichiro Suzuki rookie bobble-head doll, and \$29,500 for a 1963 copy of the first “Amazing Spiderman” issue. But these prices can nosedive, too, when the fad wears off or a recession appears. To play it safe—and perhaps finance your retirement—save your perfect-condition, in-the-box Barbies, Hot Wheels, and Star Wars lightsabers.

Cost of Producing and Marketing the Product



Who makes how much on a pair of designer denim jeans? Read the text to find out.

© Amanda Edwards/WireImage/Getty Images

\$200 pair of designer denim jeans, remember that \$100 goes to the specialty retailer that stocked, displayed, and sold the jeans to you.

Another profit consideration for marketers is to ensure that firms in their channels of distribution make an adequate profit. Without profits for channel members, a marketer is cut off from its customers. For example, of the \$200 a customer spends for a pair of designer denim jeans, 50 percent of each dollar spent goes to a specialty retailer to cover its costs and profit. The other 50 percent goes to the marketer (34 percent) and manufacturers and suppliers (16 percent).¹⁰ So, the next time you buy a

Cost of Changing Prices and Time Period They Apply

If Scandinavian Airlines asks General Electric (GE) to provide spare jet engines to power the new Boeing 737 it just bought, GE can easily set a new price for the engines to reflect its latest information since only one buyer has to be informed. But if L.L.Bean decides

that sweater prices in its catalog are too low after thousands of catalogs have been mailed to customers, it has a big problem. It must consider the cost of changing prices and which prices apply to which time periods, as well as the cost of revising its price list and reprinting and mailing another edition of its catalog. However, for many of today's consumer products, prices can change from minute to minute due to the transparency of prices afforded by the Internet.

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Single Product versus a Product Line

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When Apple introduced its first iPhone, it was not only unique and in the introductory stage of its product life cycle, but it was also the first commercially successful smartphone sold. As a result, Apple had great latitude in setting and maintaining a premium price. However, there was soon an onslaught of lower-cost rival smartphones, many of which were powered by Google's Android operating system.

How should Apple respond to this competitive pressure? Apple's CEO Tim Cook has started to move away from the company's long-term strategy of having only a single model of a product that is targeted at high-end users. An example is Apple's iPad mini, which was introduced to broaden the iPad product line.

The question now facing Apple is whether to expand its iPhone product line with an iPhone mini—a 4-inch model—at a lower price. How Apple decides to price the mini model illustrates the unique challenge of pricing a single product versus multiple products in an expanding product line.¹¹ Product-line pricing is discussed further in [Chapter 14](#).

Type of Competitive Market

The seller's price is constrained by the type of market in which it competes. Economists generally delineate four types of competitive markets, as introduced in [Chapter 3](#). From most competitive to least competitive, these are pure competition, monopolistic competition, oligopoly, and pure monopoly. [Figure 13–3](#) shows that the type of competition dramatically influences the range of price competition and, in turn, the



What are the potential benefits and dangers of Apple's decision to offer a lower-priced iPhone mini? Read the text to find out.

© Joseph Branston/Apple
Bookazine/Getty Images

nature of product differentiation and the extent of advertising. A firm must recognize the general type of competitive market it is in to understand the range of both its price and nonprice strategies. Examples of how prices can be affected by the four competitive situations follow:

- *Pure competition.* Hundreds of local grain elevators sell corn whose price per bushel is set by the marketplace. Within strains, the corn is identical, so advertising only informs buyers that the seller's corn is available.

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Monopolistic competition. Dozens of regional, private brands of peanut butter compete with national brands like Skippy and Jif. Both price competition (regional, private brands being lower than national brands) and nonprice competition (product features and advertising) exist. Page 357

- *Oligopoly.* The few sellers of aluminum (Reynolds, Alcoa) or large jetliners (Boeing, Airbus) try to avoid price competition because it can lead to disastrous price wars in which they all lose money. Yet firms in such industries stay aware of a competitor's price cuts or increases and may follow suit. The products can be undifferentiated (aluminum) or differentiated (large jetliners), and informative advertising that avoids head-to-head price competition is used. In the early stages of the video game market, the Microsoft Xbox 360's oligopolistic competition with Sony and Nintendo was so severe that Microsoft lost \$126 on every unit sold at its \$399 introductory price.¹²
- *Pure monopoly.* Johnson & Johnson (J&J) revolutionized the treatment of coronary heart disease by introducing the stent—a tiny mesh tube “spring” that props open clogged arteries. Initially a monopoly, J&J stuck with its early \$1,595 price and achieved \$1 billion in sales and 91 percent market share in two years. But its reluctance to give price reductions to hospitals for large-volume purchases turned out to be a poor strategy.

When competitors like Medtronic introduced an improved stent at lower prices, J&J's market share plummeted to 8 percent two years later.¹³

TYPE OF COMPETITIVE MARKET				
STRATEGIES AVAILABLE	PURE COMPETITION (Many sellers who follow the market price for identical, commodity products)	MONOPOLISTIC COMPETITION (Many sellers who compete on nonprice factors)	OLIGOPOLY (Few sellers who are sensitive to each other's prices)	PURE MONOPOLY (One seller who sets the price for a unique product)
Extent of price competition	Almost none: market sets price	Some: compete over range of prices	Some: price leader or follower of competitors	None: sole seller sets price
Extent of product differentiation	None: products are identical	Some: differentiate products from competitors	Various: depends on industry	None: no other producers
Extent of advertising	Little: purpose is to inform prospects that seller's products are available	Much: purpose is to differentiate firm's products from competitors	Some: purpose is to inform but avoid price competition	Little: purpose is to increase demand for product class

Figure 13–3 Pricing, product, and advertising strategies available to firms in four types of competitive markets.

Competitors' Prices and Consumers' Awareness of Them

A company must know what specific prices its present and potential competitors are charging now as well as what they are likely to charge in the near future. The company then develops a marketing mix strategy—including setting prices—to respond to its competitors' prices. Today, the Internet has increased the number of “present and potential competitors” exponentially for many products.

Competitors' prices are important only if a prospective buyer both (1) knows about those prices and (2) can act to purchase them easily. Competitor changes and price transparency through the Internet and efficient distribution make possible (1) consumer-driven pricing actions and (2) seller/retailer-driven pricing actions.

- *Consumer-Driven Pricing Actions.* With consumers able to compare prices on the Internet, they can make more efficient buying decisions.

This occurs, say, when a consumer visits the HDTV section of a store to actually examine a TV—and then goes home and orders it online at a lower price. RedLaser, an eBay-owned smartphone app, enables consumers to scan a product’s barcode on a store’s shelf and then compare that price to those both online and in nearby stores.¹⁴

- *Seller/Retailer-Driven Pricing Actions.* Aggressive price changes through the Internet started when airlines constantly changed ticket prices to fill the seats on their planes using their yield management systems. Today, many sellers are changing online prices even faster.



Read how Amazon priced the hot-selling Dance Central 3 video game, available for the Xbox.

© Ted Soqui/Corbis

For example, the day before Thanksgiving 2012, online retailer Amazon.com sold the hugely popular Dance Central 3 (DC3) Xbox video game for \$49.96—the same price as Walmart and 3 cents lower than Target. Then the pricing “dance moves” began. On Thanksgiving Day, Amazon lowered the

game’s price to \$24.99, matching Best Buy. That same day, it dropped DC3’s price to \$15.00 to match Walmart. Then, over the next several days, Amazon raised and lowered the price *seven* times. If you were lucky, you paid a price that was two-thirds lower than those who were unlucky and bought DC3 at its highest price during that week!¹⁵

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Legal and Ethical Considerations

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Setting a final price is clearly a complex process. The task is further complicated by legal and ethical issues. Five pricing practices that have received special scrutiny are price fixing, price discrimination, deceptive pricing, geographical pricing, and predatory pricing, each of which is described more fully in **Chapter 14**.

learning review

- 13-What is the difference between pricing objectives and pricing constraints?
- 13-How does the type of competitive market a firm is in affect its range in setting prices?
- 13-What are examples of (1) consumer-driven and (2) seller/retailer-driven actions made possible through price transparency on the Internet?

STEP 2: ESTIMATE DEMAND AND REVENUE

Basic to setting a product's price is the extent of customer demand for it. Marketing executives must also translate this estimate of customer demand into estimates of revenues the firm expects to receive.

LO 13-3

Explain what a demand curve is and the role of revenues in pricing decisions.

Estimating Demand



What key factors affect the demand for Red Baron frozen cheese pizzas? Read the text to find out.

© Mike Hruby

How much will you pay for a frozen cheese pizza you can pop in the oven for a quick dinner while you are studying for a marketing exam? \$6? \$8? \$10? And what are some of the factors affecting this decision? Your preference for pizza compared to other quick-service food? The ease with which you can call Domino's or your local Chinese restaurant for an already-prepared meal delivered to your residence? How much money you have

available in your credit card account while you're thinking about the tuition payment that's due next month? All these factors affect demand.

To illustrate the fundamentals of estimating demand, let's assume you are a consultant to the marketing manager at Red Baron® pizza and your job is to start analyzing the demand for its Red Baron frozen cheese pizzas. In the process, you'll have to consider what the demand curve for frozen cheese pizza might look like, how it affects Red Baron's sales revenues, and the price elasticity of demand.

The Demand Curve

VIDEO 13-2

Red Baron

kerin.tv/13e/v13-2

A **demand curve** is a graph that relates the quantity sold and price, showing the maximum number of units that will be sold at a given price. Based on secondary research you conducted regarding the annual demand for Red Baron frozen cheese pizza under circumstances that existed in 2014, you are able to construct the demand curve D_1 in **Figure 13–4A**, which you now need to update because market conditions have changed by 2015. Note the following relationship: As price falls, more people decide to buy Red Baron frozen cheese pizza, which increases its unit sales. But price is not the complete story when estimating demand. Economists emphasize three other key factors that influence demand for a product:

1. *Consumer tastes.* As we saw in **Chapter 3**, these depend on many forces such as demographics, culture, and technology. Because consumer tastes can

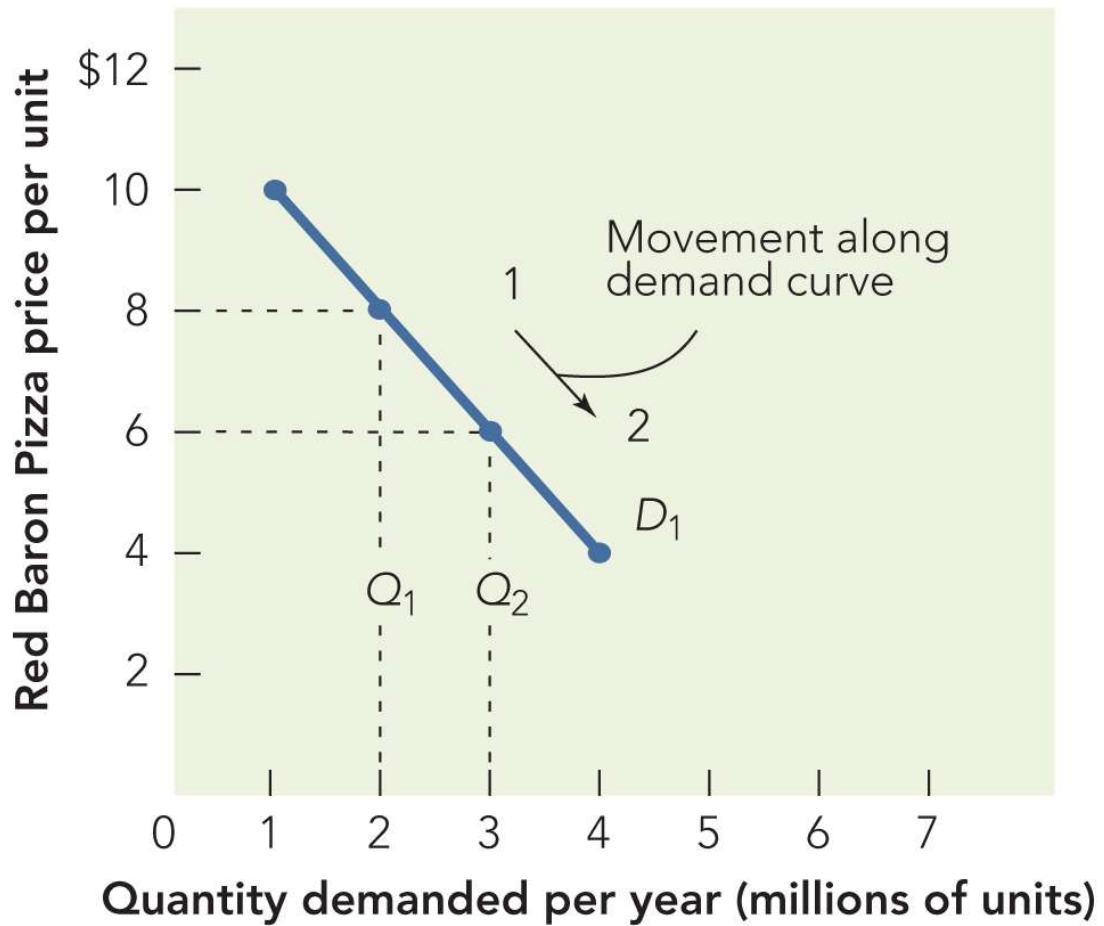
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change quickly, up-to-date marketing research is essential to estimate demand. For example, if research by nutritionists concludes that some pizzas are healthier (because they are now gluten-free or vegetarian), demand for them will probably increase.

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- 2. *Price and availability of similar products.*** If the price of a competitor's pizza that is a substitute for yours—like Tombstone[®] pizza—falls, more people will buy it; its demand will rise and the demand for yours will fall. Other low-priced dinners are also substitutes for pizza. For example, if you want something fast so you can study, you could call Domino's or a local Chinese restaurant and order a meal for home delivery. So, as the price of a substitute falls or its availability increases, the demand for your Red Baron frozen cheese pizza will fall.
- 3. *Consumer income.*** In general, as real consumers' incomes increase (allowing for inflation), demand for a product will also increase. So, if you get a scholarship and have extra cash for discretionary spending, you might eat more Red Baron frozen cheese pizzas and fewer peanut butter and jelly sandwiches to satisfy your appetite.

A: Demand curve under initial conditions



B: Shift the demand curve with more favorable conditions

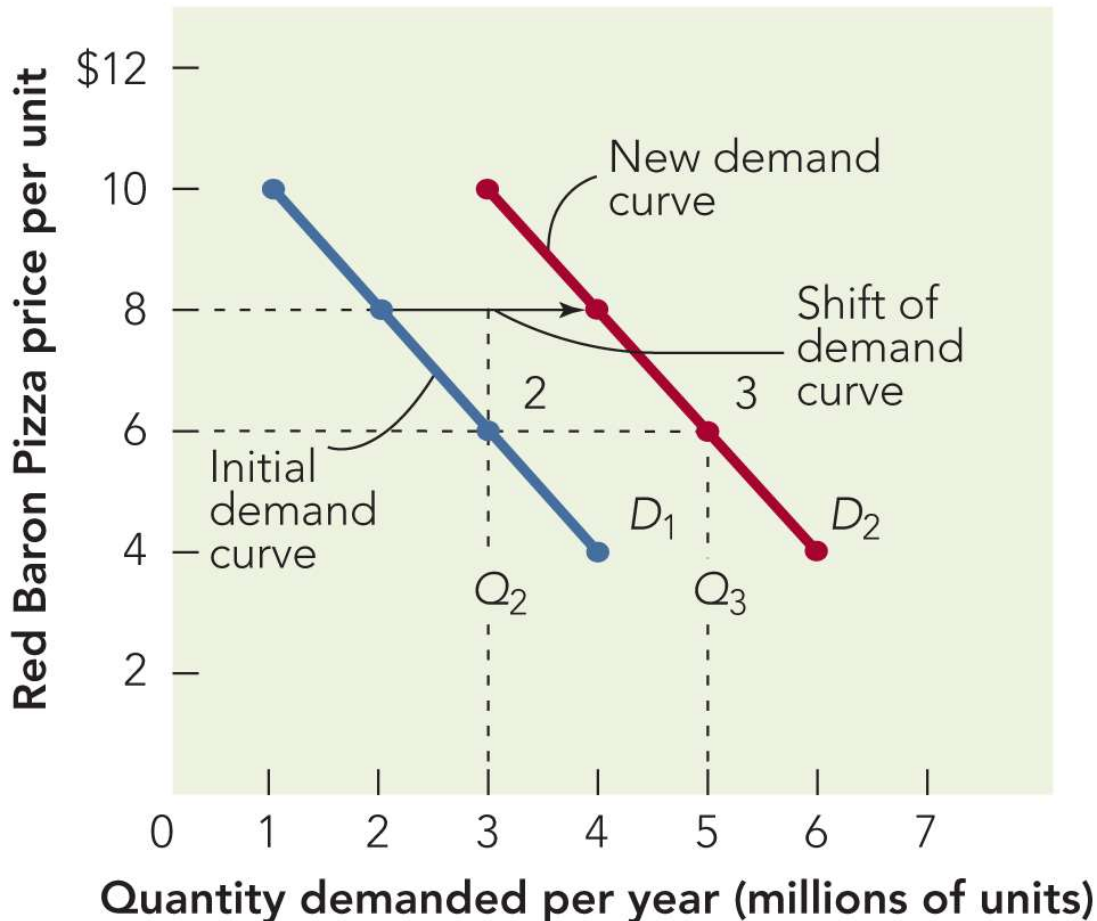


Figure 13-4 Demand curves for Red Baron frozen cheese pizza showing the effect on annual sales (quantity demanded per year) by change in price caused by (A) a movement along the demand curve and (B) a shift of the demand curve.

The first two factors influence what consumers *want* to buy, and the third factor affects what they *can* buy. Along with price, these are often called **demand factors**, or factors that determine consumers' willingness and ability to pay for products and services. As discussed in **Chapters 8** and **10**, it can be challenging to estimate demand for new products, especially because consumer likes and dislikes are often so difficult to read clearly. For example, Campbell's (yes, the soup company) spent seven years and \$55 million on a super secret project to produce a line of Intelligent Quisine (IQ) food products "scientifically proven to lower high levels of cholesterol, blood sugar, and blood pressure." After 15 months in an Ohio test market, Campbell's yanked the entire IQ line because customers found the line too pricey and lacking in variety.¹⁶

Movement Along versus Shift of a Demand Curve

The 2014 demand curve D_1 for Red Baron frozen cheese pizzas in **Figure 13-4A** shows that as its price is lowered from \$8 (point 1) to \$6 (point 2), the quantity sold (demanded) increases from 2 million (Q_1) to 3 million (Q_2) units per year. This is an example of a *movement along a demand curve* and it assumes that other factors (consumer tastes, price and availability of substitutes, and consumers' incomes) remain unchanged.

What if some of these factors do change? For example, if advertising causes more people to want Red Baron frozen cheese pizzas, demand will increase. Now the initial demand curve, D_1 (the blue line in **Figure 13-4B**), no longer represents the demand. Instead, the new demand curve, D_2 (the red line in **Figure 13-4B**) represents the new

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demand for Red Baron frozen cheese pizzas. Economists call this a *shift in the demand curve*—in this case, a shift to the right from D_1 to D_2 . This increased demand means that more Red Baron frozen cheese pizzas are wanted for a given price. At a price of \$6 (point 3), the demand is 5 million units per year (Q_3) on D_2 rather than 3 million units per year (Q_2) on D_1 . Page 360

Price Elasticity of Demand

LO 13-4

Describe what price elasticity of demand means to a manager facing a pricing decision.

With a downward-sloping demand curve, marketing managers are especially interested in how sensitive consumer demand and the firm's revenues are to changes in the product's price. This can be conveniently measured by **price elasticity of demand**, or the percentage change in quantity demanded relative to a percentage change in price. Price elasticity of demand (E) is expressed as follows:

$$\text{Price elasticity of demand (E)} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

Because quantity demanded usually decreases as price increases, price elasticity of demand is usually a negative number. However, for the sake of simplicity and by convention, elasticity figures are shown as positive numbers. Finally, price elasticity of demand assumes two forms discussed here: elastic demand and inelastic demand.

Elastic Demand and Inelastic Demand

Elastic demand exists when a 1 percent decrease in price produces more than a 1 percent increase in quantity demanded, thereby actually increasing total revenue. This results in a price elasticity that is greater than 1 with elastic demand. In other words, a product with elastic demand is one in which a slight decrease in price results in a relatively large increase in demand or units sold. The reverse is also true; with elastic demand, a slight increase in price results in a relatively large decrease in demand. So marketers may cut price to increase consumer demand, the units sold, and total revenue for a product with elastic demand, depending on what competitors' prices are.

Inelastic demand exists when a 1 percent decrease in price produces less than a 1 percent increase in quantity demanded, thereby actually decreasing total revenue. This results in a price elasticity that is less than 1 with inelastic demand. So a product with inelastic demand means that slight increases or decreases in price will not significantly affect the demand, or units sold, for the product. The concern for marketers is that while lowering price will increase the quantity sold, total revenue will actually fall.

How Price Elasticity Affects Marketing and Public Policy Decisions



A consumer product that is a necessity, like toothpaste, has an inelastic demand, which can result in an *increased* price during a recession.

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Price elasticity of demand is determined by a number of factors. The more substitutes a product or service has, the more likely it is to be price elastic. For example, a new sweater, shirt, or blouse has many possible substitutes and is price elastic, but gasoline has almost no substitutes and is price inelastic. In fact, given America's love affair with cars and driving, we are

surprisingly insensitive to price increases in gasoline: One study showed a 10 percent increase in price results in only a 0.6 percent decrease in gasoline consumption.¹⁷ This could change in the future as hybrid and all-electric cars become even more cost competitive.

Products and services considered to be necessities are price inelastic, so open-heart surgery is price inelastic, whereas airline tickets for a vacation are price elastic. Toothpaste is an example of a consumer product with inelastic demand. So even during recessions, Procter & Gamble's and Colgate's toothpastes often show price *increases* on the shelves of retailers.¹⁸ Items that require a large cash outlay compared with a person's disposable income are price elastic. Accordingly, cars are price elastic; soft drinks tend to be price inelastic.

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Price elasticity is not only a relevant concept for marketing managers, but also Page 361 important for pricing practices involving public policy. The Marketing Matters box describes how price elasticity has been applied to curbing cigarette smoking.¹⁹

Marketing Matters

customer
value

Using Big Data to Curb Smoking: Uncovering the Price Elasticity of Demand for Cigarettes

Price elasticity of demand is often studied to gauge consumer response to taxes and fees imposed by federal, state, and local government agencies. Public concern about cigarette smoking and tobacco-related diseases has resulted in hundreds of studies dealing with changes in the price of cigarettes and the incidence of smoking. This research has shown that where consumers live, their education, income, and age can affect price elasticity of demand.

As an example, a recent large-scale study with some 34,000 consumers between the ages of 15 and 29 was conducted in the United States. The study demonstrated that the price elasticity of cigarettes was inelastic and varied inversely with age: 0.83 for ages 15–17, 0.52 for ages 18–20, 0.37 for ages 21–23, 0.20 for ages 24–26, and 0.09 for ages 27–29. Thus, younger consumers (ages 15–17) were more likely to reduce the number of cigarettes smoked in response to increased prices than older consumers (ages 27–29).

To test these findings, New York City recently increased the combined taxes from federal, state, and local governments on a pack of Marlboro Light Kings cigarettes to

\$6.86. So the typical retail price in that city was more than \$12 a pack. As a result of these inflated prices, the number of high school students smoking in New York City has hit a new low of 13.8 percent, far below the national average.



Fundamentals of Estimating Revenue

While economists may talk about “demand curves,” marketing executives are more likely to speak in terms of “revenue generated.” Demand curves lead directly to an essential revenue concept critical to pricing decisions: **total revenue**, or the total money received from the sale of a product. Total revenue (TR) equals the unit price (P) times the quantity sold (Q). Using this equation, let’s recall our Red Baron pizza example and assume our annual demand has improved, our price is \$6 per unit, and we sell 5 million per year. So,

$$\begin{aligned} \text{TR} &= P \times Q \\ &= \$6 \times 5,000,000 \\ &= \$30,000,000 \end{aligned}$$

This combination of price and quantity sold annually will give us a total revenue of \$30,000,000 per year. Is that good? Are you making a profit? Alas, total revenue is only part of the profit equation that we saw earlier:

Total profit = Total revenue – Total cost

The next section covers the other part of the profit equation: cost.

learning review

- 13- What is the difference between a movement along and a shift
7. of a demand curve?
- 13- What is the difference between elastic demand and inelastic
8. demand?
- 13- What is total revenue and how is it calculated?
9.

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STEP 3: DETERMINE COST, VOLUME, AND PROFIT RELATIONSHIPS

LO 13-5

Explain the role of costs in pricing decisions and describe how various combinations of price, fixed cost, and unit variable cost affect a firm's break-even point.

While revenues are the moneys received by the firm from selling its products or services to customers, costs or expenses are the monies the firm pays out to its employees and suppliers. Marketing managers often use break-even analysis to relate revenues and costs, topics covered in this section.

The Importance of Controlling Costs

Understanding the role and behavior of costs is critical for all marketing decisions, particularly pricing decisions. Four cost concepts are important in pricing decisions: **total cost**, **fixed cost**, **variable cost**, and **unit variable cost** (see **Figure 13-5**).

Total cost (TC) is the total expense incurred by a firm in producing and marketing a product. Total cost is the sum of fixed cost and variable cost.

Fixed cost (FC) is the sum of the expenses of the firm that are stable and do not change with the quantity of a product that is produced and sold. Examples of fixed costs are rent on the building, executive salaries, and insurance.

Variable cost (VC) is the sum of the expenses of the firm that vary directly with the quantity of a product that is produced and sold. For example, as the quantity sold doubles, the variable cost doubles. Examples are the direct labor and direct materials used in producing the product and the sales commissions that are tied directly to the quantity sold. As mentioned above,

$$TC = FC + VC$$

Unit variable cost (UVC) is expressed on a per unit basis, or $UVC = \frac{VC}{Q}$

Figure 13–5 Fundamental concepts about “costs,” which are the monies the firm pays out to its employees and suppliers.

Many firms go bankrupt because their costs get out of control, causing their total costs—the sum of their fixed costs and variable costs—to exceed their total revenues over an extended period of time. So firms constantly try to control their fixed costs, like insurance and executive salaries, and reduce the variable costs in their manufactured items by having production done outside the United States. This is why sophisticated marketing managers make pricing decisions that balance both revenues and costs.

Break-Even Analysis

Break-even analysis is a technique that analyzes the relationship between total revenue and total cost to determine profitability at various levels of output. **Figure 13–6** provides the data needed to conduct a break-even analysis. The **break-even point (BEP)** is the quantity at which total revenue and total cost are equal. Profit then comes from all units sold beyond the BEP. In terms of the definitions in **Figure 13–5**:

$$\text{BEP}_{\text{Quantity}} = \frac{\text{Fixed cost}}{\text{Unit price} - \text{Unit variable cost}} = \frac{\text{FC}}{\text{P} - \text{UVC}}$$

Quantity of Pictures Sold (Q)	Price per Picture (P)	Total Revenue (TR = P × Q)	Unit Variable Cost (UVC)	Total Variable Cost (VC = UVC × Q)	Fixed Cost (FC)	Total Cost (TC = FC + VC)	Profit (TR – TC)
0	\$120	\$0	\$40	\$0	\$32,000	\$32,000	(\$32,000)
400	\$120	\$48,000	\$40	\$16,000	\$32,000	\$48,000	\$0
800	\$120	\$96,000	\$40	\$32,000	\$32,000	\$64,000	\$32,000
1,200	\$120	\$144,000	\$40	\$48,000	\$32,000	\$80,000	\$64,000
1,600	\$120	\$192,000	\$40	\$64,000	\$32,000	\$96,000	\$96,000
2,000	\$120	\$240,000	\$40	\$80,000	\$32,000	\$112,000	\$128,000

Figure 13–6 Calculating a break-even point for the picture frame shop in the text example shows that its profit starts at 400 pictures sold per year.

Calculating a Break-Even Point

Suppose you are the owner of a picture frame shop and you wish to identify how many pictures you must sell to cover your fixed cost at a given price. Let's assume demand for your pictures is strong, so the average price customers are willing to pay for each picture is \$120. Also, suppose your fixed cost

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(FC) is \$32,000 (real estate taxes, interest on a bank loan, etc.) and unit variable cost (UVC) for a picture is now \$40 (labor, glass, frame, and matting).

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Your break-even quantity (BEP) is 400 pictures, as follows:

$$\text{BEP}_{\text{Quantity}} = \frac{\$32,000}{\$120 - \$40}$$

$$\text{BEP}_{\text{Quantity}} = 400 \text{ pictures}$$

Developing a Break-Even Chart

The row shaded in orange in **Figure 13–6** shows that your break-even quantity at a price of \$120 per picture is 400 pictures. At less than 400 pictures, your picture frame shop incurs a loss, and at more than 400 pictures, it makes a profit. **Figure 13–7** depicts a graphic presentation of the break-even analysis, called a **break-even chart**. It shows that total revenue (line DE) and total cost (line AC) intersect and are equal at a quantity of 400 pictures

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sold, which is the break-even point (F) at which profit is exactly \$0. You want Page 364
to do better? If your picture frame shop could increase the quantity sold
annually to 2,000 pictures, the graph in **Figure 13–7** shows you can earn an annual
profit of \$128,000 ($\$240,000 - \$112,000$ or line EC), shown by the row shaded in green
in **Figure 13–6**.

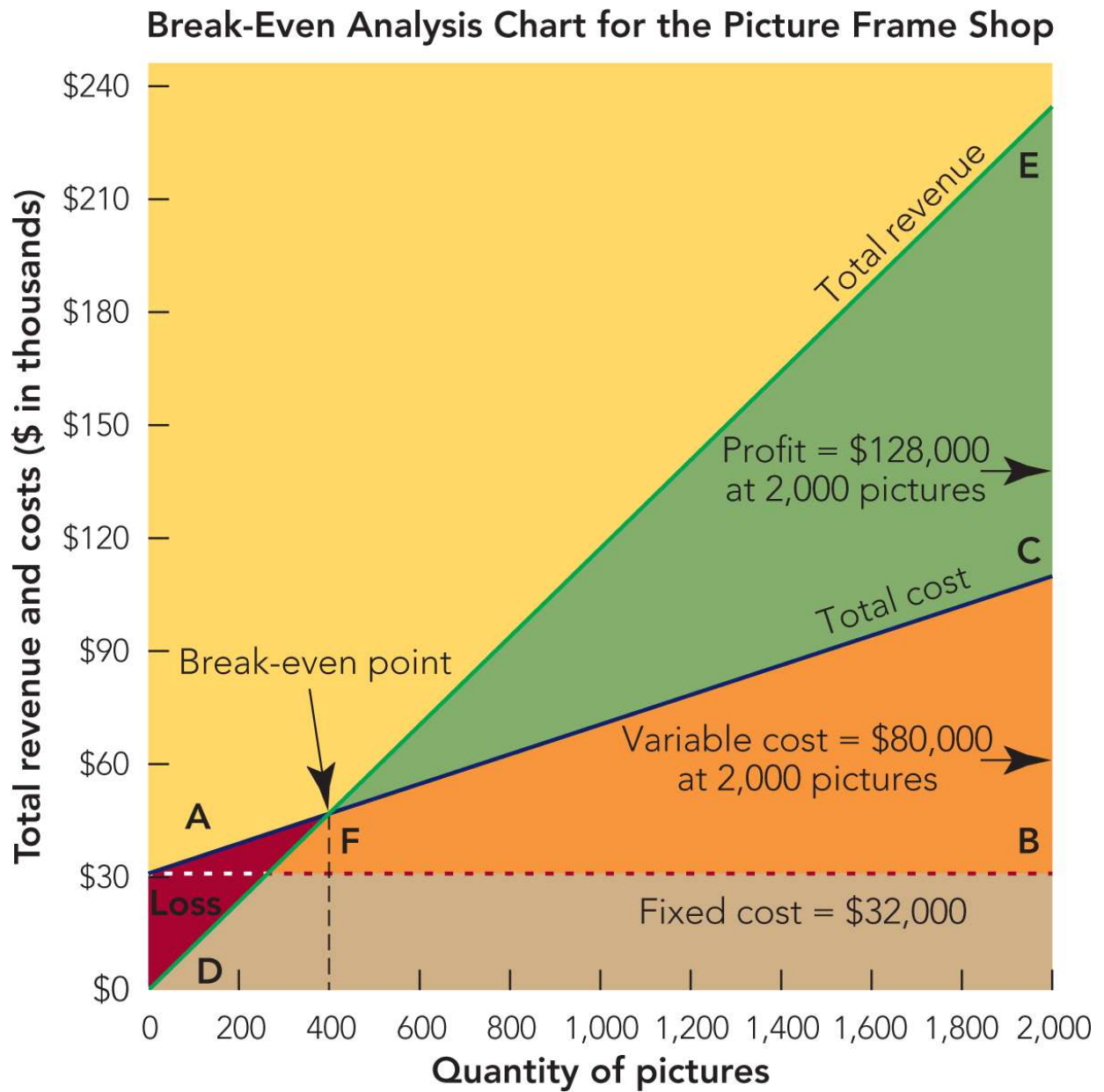


Figure 13-7 This break-even chart for a picture frame shop shows the break-even point at 400 pictures and the annual profit at 2,000 pictures.

learning review

- 13-10. What is the difference between fixed costs and variable costs?
- 13-11. What is a break-even point?

LEARNING OBJECTIVES REVIEW

LO 13-1 *Identify the elements that make up a price.*

Price is the money or other considerations (such as barter) exchanged for the ownership or use of a product or service. Although price typically involves money, the amount exchanged is often different from the list or quoted price because of incentives (rebates, discounts, etc.), allowances (trade), and extra fees (finance charges, surcharges, etc.). The price of an offering is often used to indicate value, which is the ratio of perceived benefits to price. Pricing has a direct effect on a firm's profits, which is determined by the profit equation: $\text{Profit} = \text{Total revenue} - \text{Total cost}$.

LO 13-2 *Recognize the objectives a firm has in setting prices and the constraints that restrict the range of prices a firm can charge.*

Pricing objectives specify the role of price in a firm's marketing strategy and may include profit, sales revenue, market share, unit volume, survival, or some socially responsible price level. Pricing constraints that restrict a firm's pricing flexibility include demand, product newness, other products sold by the firm, production and marketing costs, cost of price changes, type of competitive market, and the prices of competitive substitutes.

LO 13-3 *Explain what a demand curve is and the role of revenues in pricing decisions.*

A demand curve is a graph relating the quantity sold and price, which shows the maximum number of units that will be sold at a given price. Three demand factors

affect price: (a) consumer tastes, (b) price and availability of substitute products, and (c) consumer income. These demand factors determine consumers' willingness and ability to pay for products and services. Assuming these demand factors remain unchanged, if the price of a product is lowered or raised, then the quantity demanded for it will increase or decrease, respectively.

Three important forms of revenues impact a firm's pricing decisions: (a) total revenue, which is the total money received from the sale of a product; (b) average revenue, which is the average amount of money received for selling one unit of a product (which is simply the price of the unit); and (c) marginal revenue, which is the change in total revenue that results from producing and marketing one additional unit.

LO 13-4 *Describe what price elasticity of demand means to a manager facing a pricing decision.*

Price elasticity of demand measures the responsiveness of units of a product sold to a change in price, which is expressed as the percentage change in the quantity of a product demanded divided by the percentage change in price. Price elasticity is important to marketing managers because a change in price usually has an important effect on the number of units of the product sold and on total revenue.

LO 13-5 *Explain the role of costs in pricing decisions and describe how various combinations of price, fixed cost, and unit variable cost affect a firm's break-even point.*

Five important costs impact a firm's pricing decisions: (a) total cost, or total expenses, is the sum of fixed cost and variable cost incurred by a firm in producing and marketing a product; (b) fixed cost, is the sum of expenses of the firm that are stable and do not change with the quantity of a product that is produced and sold; (c) variable cost, is the sum of expenses of the firm that vary directly with the quantity of a product that is produced and sold; (d) unit variable cost, is variable cost expressed on a per unit basis; and (e) marginal cost, is the change in total cost that results from producing and marketing one additional unit of the product. Break-even analysis is a technique that analyzes the relationship between total revenue and total cost to determine profitability at various levels of output. The break-even point is the

quantity at which total revenue and total cost are equal. Assuming no change in price, if the costs of a firm's product increase due to higher fixed costs (manufacturing or advertising) or variable costs (direct labor or materials), then its break-even point will be higher. And if total cost is unchanged, an increase in price will reduce the break-even point.

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LEARNING REVIEW ANSWERS

13-1 What is price?

Answer: Price is the money or other considerations (including other products and services) exchanged for the ownership or use of a product or service.

13-2 What factors impact the list price to determine the final price?

Answer: Several factors increase or decrease the final price of an offering that the consumer pays. These factors help construct the price equation, which includes incentives, such as cash discounts, allowances, and rebates, that decrease the final price and extra fees or surcharges that increase the final price.

13-3 What is the profit equation?

Answer: Price has a direct effect on a firm's profits, which can be expressed in the following profit equation: Profit = Total revenue – Total cost or [(Unit price × Quantity sold) – (Fixed cost + Variable cost)].

13-4 What is the difference between pricing objectives and pricing constraints?

Answer: Pricing objectives involve specifying the role of price in an organization's marketing and strategic plans whereas pricing constraints are factors that limit the range of prices a firm may set.

13-5 How does the type of competitive market a firm is in affect its range in setting prices?

Answer: The seller's price is constrained by the type of market in which it competes. Economists generally delineate four types of competitive markets: (1) With pure competition, there are many sellers who follow the market price for identical, commodity products. (2) With monopolistic competition, there are many sellers who compete on nonprice factors such as product features and advertising. (3) With an oligopoly, there are (a) a few sellers who are sensitive to each other's prices and (b) a firm that is a price leader that sets the market price that other firms follow. The firms that are price followers set a price based on the prices set by their competitors to avoid a price war. (4) With a pure monopoly, there is one seller in the market who can set any price it wants for its unique product.

13-6 What are examples of (1) consumer-driven and (2) seller- or retailer-driven pricing actions made possible through price transparency on the Internet?

Answer: Price transparency occurs as a result of a consumer's near-instantaneous access to competitors' prices for the same offering through the Internet. Two dimensions of price transparency are: (1) Consumer-driven pricing actions, in which consumers make more efficient buying decisions by comparing the price of an item first in the store and then on the Internet using a smartphone. If the price is lower on the

Internet, they'll ask the store to match the price or go home and buy the item online. This behavior is called showrooming. (2) Seller- or retailer-driven pricing actions, in which sellers can quickly change their online prices. This is made possible by Internet-based dynamic pricing, in which the seller changes prices in response to its existing inventory and the prices of its competitors.

13-7 What is the difference between a movement along and a shift of a demand curve?

Answer: A demand curve is a graph that relates the quantity sold and price, showing the maximum number of units that will be sold at a given price. A movement along a demand curve (up or down) for a product occurs when its price is lowered or increased and the quantity demanded for it correspondingly increases or decreases, assuming that other factors such as consumer tastes, promotion (advertising and/or sales promotion), price and availability of substitute products, and/or consumer incomes remain unchanged. However, if one or more of these factors do change, then the demand curve for a product will shift to the right or left based on whether the change(s) was favorable or not. This means that there will be either an increase or decrease in demand for the product based on the change in the factor(s).

13-8 What is the difference between elastic demand and inelastic demand?

Answer: Price elasticity of demand is the percentage change in the quantity demanded relative to a percentage change in price and is expressed as follows: Price elasticity of demand (E) = Percentage change in quantity demanded (% Δ in Q) \div Percentage change in price (% Δ in P). Elastic demand exists when a 1 percent decrease in price produces more than a 1

percent increase in quantity demanded, thereby actually increasing total revenue. This results in a price elasticity that is greater than 1. Inelastic demand exists when a 1 percent decrease in price produces less than a 1 percent increase in quantity demanded, thereby actually decreasing total revenue. This results in a price elasticity that is less than 1.

13-9 What is total revenue and how is it calculated?

Answer: Total revenue (TR) is the total money received from the sale of a product. Total revenue (TR) equals the product's unit price (P) times the quantity sold (Q) or $TR = P \times Q$.

13-10 What is the difference between fixed costs and variable costs?

Answer: Fixed cost (FC) is the sum of the expenses of the firm that are stable and do not change with the quantity of a product that is produced and sold. Examples of fixed costs are rent on the building, executive salaries, and insurance. Variable cost (VC) is the sum of the expenses of the firm that vary directly with the quantity of a product that is produced and sold. Examples are the direct labor and direct materials used in producing the product and the sales commissions that are tied directly to the quantity sold.

13-11 What is a break-even point?

Answer: Break-even analysis is a technique that analyzes the relationship between total revenue and total cost to determine profitability at various levels of output. The break-even point (BEP) is the quantity at which total revenue and total cost are equal. Profit then comes from all units sold beyond the BEP. Break-even point (BEP) = $[\text{Fixed cost} \div (\text{Unit price} - \text{Unit variable cost})]$.

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APPLYING MARKETING KNOWLEDGE

1. How would the price equation apply to the purchase price of (a) gasoline, (b) an airline ticket, and (c) a checking account?
2. What would be your response to the statement, “Profit maximization is the only legitimate pricing objective for the firm”?
3. How is a downward-sloping demand curve related to total revenue and marginal revenue?
4. A marketing executive once said, “If the price elasticity of demand for your product is inelastic, then your price is probably too low.” What is this executive saying in terms of the economic principles discussed in this chapter?
5. A marketing manager reduced the price on a brand of cereal by 10 percent and observed a 25 percent increase in quantity sold. The manager then thought that if the price were reduced by another 20 percent, a 50 percent increase in quantity sold would occur. What would be your response to the marketing manager’s reasoning?
6. A student theater group at a university has developed a demand schedule that shows the relationship between ticket prices and demand based on a student survey (see the table that follows). (a)

Graph the demand curve and the total revenue curve based on these data. What ticket price might be set based on this analysis? (b) What other factors should be considered before the final price is set?

Ticket Price	Number of Students Who Would Buy
\$1	300
2	250
3	200
4	150
5	100

7. Touché Toiletries, Inc. has developed an addition to its Lizardman Cologne line tentatively branded Ode d'Toade Cologne. Unit variable costs are 45 cents for a three-ounce bottle, and heavy advertising expenditures in the first year would result in total fixed costs of \$900,000. Ode d'Toade Cologne is priced at \$7.50 for a three-ounce bottle. How many bottles of Ode d'Toade must be sold to break even?
8. Suppose that marketing executives for Touché Toiletries (see problem 7) reduced the price to \$6.50 for a three-ounce bottle of Ode d'Toade and the fixed costs were \$1,100,000. Suppose further that the unit variable cost remained at 45 cents for a three-ounce bottle. (a) How

many bottles must be sold to break even? (b) What dollar profit level would Ode d'Toade achieve if 200,000 bottles were sold?

9. Executives of Random Recordings, Inc. produced a digital album titled *Sunshine/Moonshine* by the Starshine Sisters Band. (a) Using the price and cost information in the table, prepare a chart like that in Figure 13–10 showing total cost, fixed cost, and total revenue for album quantity sold levels starting at 10,000 through 100,000 digital albums at 10,000 intervals, that is, 10,000; 20,000; 30,000; and so on. (b) What is the break-even point for the digital album?

Selling price	\$10.00 per album
Album cover	\$1.00 per album
Songwriter's royalties	\$0.30 per album
Recording artists' royalties	\$0.70 per album
Direct material and labor costs to produce the album	\$1.00 per album
Fixed cost of producing an album (advertising, studio fee, etc.)	\$100,000

BUILDING YOUR MARKETING PLAN

In starting to set a final price:

1. List two pricing objectives and three pricing constraints.
2. Think about your customers and competitors and set three possible prices.
3. Assume a fixed cost and unit variable cost and (a) calculate the break-even points and (b) plot a break-even chart for the three prices specified in step 2.

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Video Case 13 Video Case 13: Washburn Guitars: Using Break-Even Points to Make Pricing Decisions

VIDEO 13-3

Washburn Guitars Video Case

kerin.tv/13e/v13-3

“We offer a guitar at every price point for every skill level,” explains Kevin Lello, vice president of marketing at Washburn Guitars. Washburn is one of the most prestigious guitar manufacturers in the world, offering instruments that range from one-of-a-kind, custom-made acoustic and electric guitars and basses to less-expensive, mass-produced guitars. Lello has responsibility for marketing Washburn’s products and ensuring that the price of each product matches the company’s objectives related to sales, profit, and market share. “We do pay attention to break-even points,” adds Lello. “We need to know exactly how much a guitar costs us, and how much the overhead is for each guitar.”



© Paul Kane/Getty Images

THE COMPANY

The modern Washburn Guitars company started in 1977 when a small Chicago firm bought the century-old Washburn brand name and a small inventory of guitars, parts, and promotional supplies. At that time, annual company sales of about 2,500 guitars generated revenues of \$300,000. Washburn's first catalog, appearing in 1978, told a frightening truth:

Our designs are translated by Japan's most experienced craftsmen, assuring the consistent quality and craftsmanship for which they are known.

At that time, the American guitar-making craft was at an all-time low. Guitars made by Japanese firms, such as Ibanez and Yamaha, were in use by an increasing number of professionals.

Times have changed for Washburn. Today, the company sells about 50,000 guitars each year and annual revenues exceed \$40 million. All this resulted from Washburn's aggressive marketing strategies to develop product lines with different price points targeted at musicians in distinctly different market segments.

THE PRODUCTS AND MARKET SEGMENTS

One of Washburn's early successes was the trendsetting Festival Series of cutaway, thin-bodied flattops, with built-in bridge pickups and controls. This guitar became the standard for live performances as its popularity with rock and country stars increased. Over the years, several generations of musicians have used Washburn guitars. Early artists included Bob Dylan, Dolly Parton, Greg Allman, and the late George Harrison of the Beatles. In recent years, Mike Kennerty of The All-American Rejects, Rick Savage of Def Leppard, and Hugh McDonald of Bon Jovi have been among the many musicians who use Washburn products.

Until 1991, all Washburn guitars were manufactured in Asia. That year Washburn started building its high-end guitars in the United States. Today, Washburn marketing executives divide its product line into four categories to appeal to different market segments. From high-end guitars to low-end ones, these product groupings are:

- One-of-a-kind, custom instruments.
- Batch-custom instruments.
- Mass-customized instruments.
- Mass-produced instruments.

The one-of-a-kind custom products appeal to the many stars who use Washburn instruments as well as collectors. The batch-custom products appeal to professional musicians. The mass-customized products appeal to musicians with intermediate skill levels who may not yet be professionals. Finally, the mass-produced units are targeted at first-time buyers and are still manufactured in Asian factories.

PRICING ISSUES

Setting prices for its various lines presents a continuing challenge for Washburn. Not only do the prices have to reflect the changing tastes of its various segments of musicians, but the prices must also be competitive with the prices of other guitars manufactured and marketed globally. The price elasticity of demand, or price sensitivity, for Washburn's products varies between its segments. To reduce the price sensitivity for some of its products, Washburn uses endorsements by internationally known musicians who play its instruments and lend their names to lines of Washburn signature guitars. Stars playing Washburn guitars, such as Nuno Bettencourt of

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Extreme, Paul Stanley of KISS, Scott Ian of Anthrax, and Dan Donegan of Disturbed, have their own lines of signature guitars—the “batch-custom” units mentioned earlier. These guitars receive excellent reviews. *Total Guitar* magazine, for example, recently said, “If you want a truly original axe that has been built with great attention to detail...then the Washburn Maya Pro DD75 could be the one.”

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Source: Washburn Guitars

Bill Abel, Washburn's vice president of sales, is responsible for reviewing and approving prices for the company's lines of guitars. Setting a sales target of 2,000 units for a new line of guitars, he is considering a suggested retail price of \$349 per unit for customers at one of the hundreds of retail outlets carrying the Washburn line. For planning purposes, Abel estimates half of the final retail price will be the price Washburn nets when it sells its guitar to the wholesalers and dealers in its channel of distribution.

Looking at Washburn's financial data for its present plant, Abel estimates that this line of guitars must bear these fixed costs:

Rent and taxes	= \$14,000
Depreciation of equipment	= \$ 4,000
Management and quality control program	= \$20,000

In addition, he estimates the variable costs for each unit to be:

Direct materials	= \$25/unit
Direct labor	= 15 hours/unit @ \$8/hour

Carefully kept production records at Washburn's plant make Abel believe that these are reasonable estimates. He explains, "Before we begin a production run, we have a good feel for what our costs will be. The U.S.-built N-4, for example, simply costs more than one of our foreign-produced electrics."

Caught in the global competition for guitar sales, Washburn continually searches for ways to reduce and control costs. For example, Washburn recently purchased Parker Guitar, another guitar manufacturer that designed products for professionals and collectors, and will combine the two production facilities in a new location. Washburn expects the acquisition to lower its fixed and variable costs. Specifically, Washburn projects that its new factory location will reduce its rent and taxes expense by 40 percent, and the new skilled employees will reduce the hours of work needed for each unit by 15 percent.

By managing the prices of its products, Washburn also helps its dealers and retailers. In fact, Abel believes it is another reason for Washburn's success: "We have excellent

relationships with the independent retailers. They're our lifeblood, and our outlet to sell our product. We sell through chains and online dealers, but it's the independent dealer that sells the guitars. So we take a smaller margin from them because they have to do more work. They appreciate it, and they go the extra mile for us."²⁰

Questions

1. What factors are most likely to affect the demand for the lines of Washburn guitars (a) bought by a first-time guitar buyer and (b) bought by a sophisticated musician who wants a signature model?
2. For Washburn, what are examples of (a) shifting the demand curve to the right to get a higher price for a guitar line (movement of the demand curve) and (b) pricing decisions involving moving along a demand curve?
3. In Washburn's factory, what is the break-even point for the new line of guitars if the retail price is (a) \$349, (b) \$389, and (c) \$309? Also, (d) if Washburn achieves the sales target of 2,000 units at the \$349 retail price, what will its profit be?
4. Assume that the merger with Parker leads to the cost reductions projected in the case. What will be the (a) new break-even point at a \$349 retail price for this line of guitars and (b) new profit if it sells 2,000 units?
5. If, for competitive reasons, Washburn eventually has to move all its production back to Asia, (a) which specific fixed and variable costs might be lowered and (b) what additional fixed and variable costs might it expect to incur?

Chapter Notes

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