



CHAPTER 16

Monopolistic Competition

You walk into a bookstore to buy a book to read during your next vacation. On the store's shelves you find a Sue Grafton mystery, a Stephen King thriller, a David McCullough history, a Stephenie Meyer vampire romance, and many other choices. When you pick out a book and buy it, what kind of market are you participating in?

On the one hand, the market for books seems competitive. As you look over the shelves at your bookstore, you find many authors and many publishers vying for your attention. A buyer in this market has thousands of competing products from which to choose. And because anyone can enter the industry by writing and publishing a book, the book business is not very profitable. For every highly paid novelist, there are hundreds of struggling ones.

On the other hand, the market for books seems monopolistic. Because each book is unique, publishers have some latitude in choosing what price to charge. The sellers in this market are price makers rather than price takers.



And indeed, the price of books greatly exceeds marginal cost. The price of a typical hardcover novel, for instance, is about \$25, whereas the cost of printing one additional copy of the novel is less than \$5.

The market for novels fits neither the competitive nor the monopoly model. Instead, it is best described by the model of *monopolistic competition*, the subject of this chapter. The term “monopolistic competition” might at first seem to be an oxymoron, like “jumbo shrimp.” But as we will see, monopolistically competitive industries are monopolistic in some ways and competitive in others. The model describes not only the publishing industry but also the market for many other goods and services.

16-1 Between Monopoly and Perfect Competition

The previous two chapters analyzed markets with many competitive firms and markets with a single monopoly firm. In Chapter 14, we saw that the price in a perfectly competitive market always equals the marginal cost of production. We also saw that, in the long run, entry and exit drive economic profit to zero, so the price also equals average total cost. In Chapter 15, we saw how monopoly firms can use their market power to keep prices above marginal cost, leading to a positive economic profit for the firm and a deadweight loss for society. Competition and monopoly are extreme forms of market structure. Competition occurs when there are many firms in a market offering essentially identical products; monopoly occurs when there is only one firm in a market.

Although the cases of perfect competition and monopoly illustrate some important ideas about how markets work, most markets in the economy include elements of both these cases and, therefore, are not completely described by either of them. The typical firm in the economy faces competition, but the competition is not so rigorous that it makes the firm a price taker like the firms analyzed in Chapter 14. The typical firm also has some degree of market power, but its market power is not so great that the firm can be described exactly by the monopoly model presented in Chapter 15. In other words, many industries fall somewhere between the polar cases of perfect competition and monopoly. Economists call this situation *imperfect competition*.

oligopoly

a market structure in which only a few sellers offer similar or identical products

One type of imperfectly competitive market is an **oligopoly**, a market with only a few sellers, each offering a product that is similar or identical to the products offered by other sellers in the market. Economists measure a market’s domination by a small number of firms with a statistic called the *concentration ratio*, which is the percentage of total output in the market supplied by the four largest firms. In the U.S. economy, most industries have a four-firm concentration ratio under 50 percent, but in some industries, the biggest firms play a more dominant role. Highly concentrated industries include the market for electric lamp bulbs (which has a concentration ratio of 75 percent), breakfast cereal (80 percent), aircraft manufacturing (81 percent), household laundry equipment (98 percent), and cigarettes (98 percent). These industries are best described as oligopolies. In the next chapter we see that the small number of firms in oligopolies makes strategic interactions among them a key part of the analysis. That is, in choosing how much to produce and what price to charge, each firm in an oligopoly is concerned not only with what its competitors are doing but also with how its competitors would react to what it might do.

monopolistic competition

a market structure in which many firms sell products that are similar but not identical

A second type of imperfectly competitive market is called **monopolistic competition**. This describes a market structure in which there are many firms selling

products that are similar but not identical. In a monopolistically competitive market, each firm has a monopoly over the product it makes, but many other firms make similar products that compete for the same customers.

To be more precise, monopolistic competition describes a market with the following attributes:

- *Many sellers:* There are many firms competing for the same group of customers.
- *Product differentiation:* Each firm produces a product that is at least slightly different from those of other firms. Thus, rather than being a price taker, each firm faces a downward-sloping demand curve.
- *Free entry and exit:* Firms can enter or exit the market without restriction. Thus, the number of firms in the market adjusts until economic profits are driven to zero.

A moment’s thought reveals a long list of markets with these attributes: books, DVDs, computer games, restaurants, piano lessons, cookies, clothing, and so on.

Monopolistic competition, like oligopoly, is a market structure that lies between the extreme cases of perfect competition and monopoly. But oligopoly and monopolistic competition are quite different. Oligopoly departs from the perfectly competitive ideal of Chapter 14 because there are only a few sellers in the market. The small number of sellers makes rigorous competition less likely and strategic interactions among them vitally important. By contrast, a monopolistically competitive market has many sellers, each of which is small compared to the market. It departs from the perfectly competitive ideal because each of the sellers offers a somewhat different product.

Figure 1 summarizes the four types of market structure. The first question to ask about any market is how many firms there are. If there is only one firm, the market is a monopoly. If there are only a few firms, the market is an oligopoly. If there are many firms, we need to ask another question: Do the firms sell identical or differentiated products? If the many firms sell differentiated products, the market is monopolistically competitive. If the many firms sell identical products, the market is perfectly competitive.

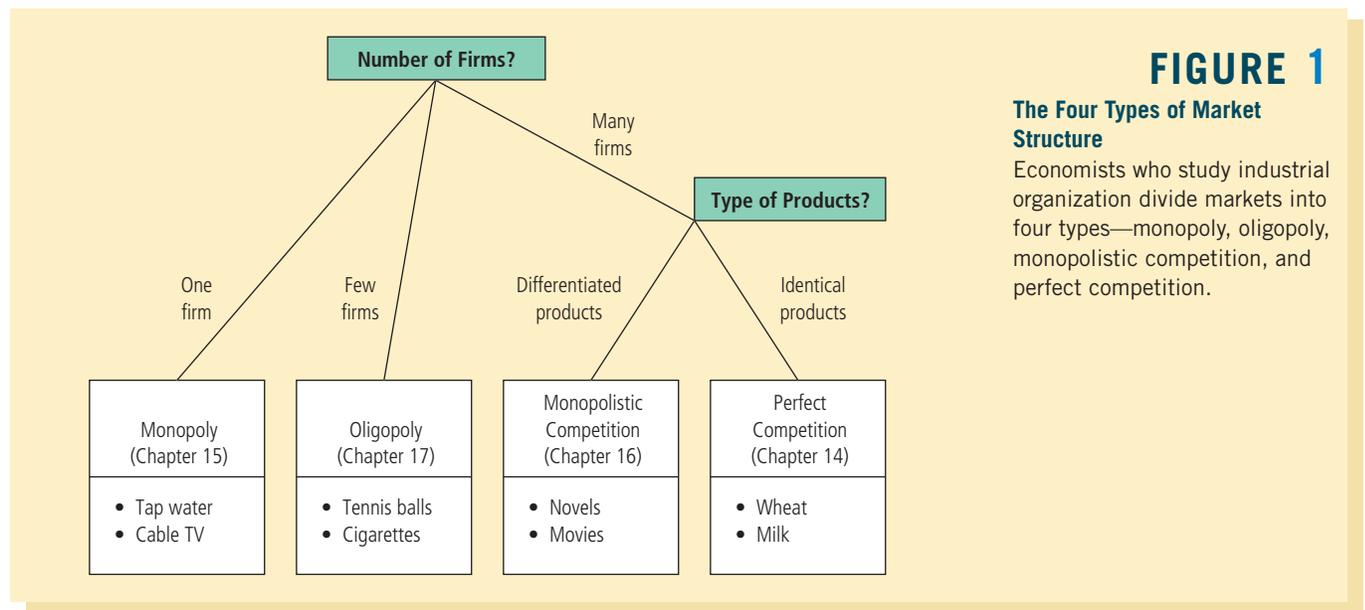


FIGURE 1

The Four Types of Market Structure

Economists who study industrial organization divide markets into four types—monopoly, oligopoly, monopolistic competition, and perfect competition.

Because reality is never as clear-cut as theory, at times you may find it hard to decide what structure best describes a market. There is, for instance, no magic number that separates “few” from “many” when counting the number of firms. (Do the approximately dozen companies that now sell cars in the United States make this market an oligopoly, or is the market more competitive? The answer is open to debate.) Similarly, there is no sure way to determine when products are differentiated and when they are identical. (Are different brands of milk really the same? Again, the answer is debatable.) When analyzing actual markets, economists have to keep in mind the lessons learned from studying all types of market structure and then apply each lesson as it seems appropriate.

Now that we understand how economists define the various types of market structure, we can continue our analysis of each of them. In this chapter we examine monopolistic competition. In the next chapter we analyze oligopoly.

Quick Quiz Define oligopoly and monopolistic competition and give an example of each.

16-2 Competition with Differentiated Products

To understand monopolistically competitive markets, we first consider the decisions facing an individual firm. We then examine what happens in the long run as firms enter and exit the industry. Next, we compare the equilibrium under monopolistic competition to the equilibrium under perfect competition that we examined in Chapter 14. Finally, we consider whether the outcome in a monopolistically competitive market is desirable from the standpoint of society as a whole.

16-2a The Monopolistically Competitive Firm in the Short Run

Each firm in a monopolistically competitive market is, in many ways, like a monopoly. Because its product is different from those offered by other firms, it faces a downward-sloping demand curve. (By contrast, a perfectly competitive firm faces a horizontal demand curve at the market price.) Thus, the monopolistically competitive firm follows a monopolist’s rule for profit maximization: It chooses to produce the quantity at which marginal revenue equals marginal cost and then uses its demand curve to find the price at which it can sell that quantity.

Figure 2 shows the cost, demand, and marginal-revenue curves for two typical firms, each in a different monopolistically competitive industry. In both panels of this figure, the profit-maximizing quantity is found at the intersection of the marginal-revenue and marginal-cost curves. The two panels in this figure show different outcomes for the firm’s profit. In panel (a), price exceeds average total cost, so the firm makes a profit. In panel (b), price is below average total cost. In this case, the firm is unable to make a positive profit, so the best the firm can do is to minimize its losses.

All this should seem familiar. A monopolistically competitive firm chooses its quantity and price just as a monopoly does. In the short run, these two types of market structure are similar.

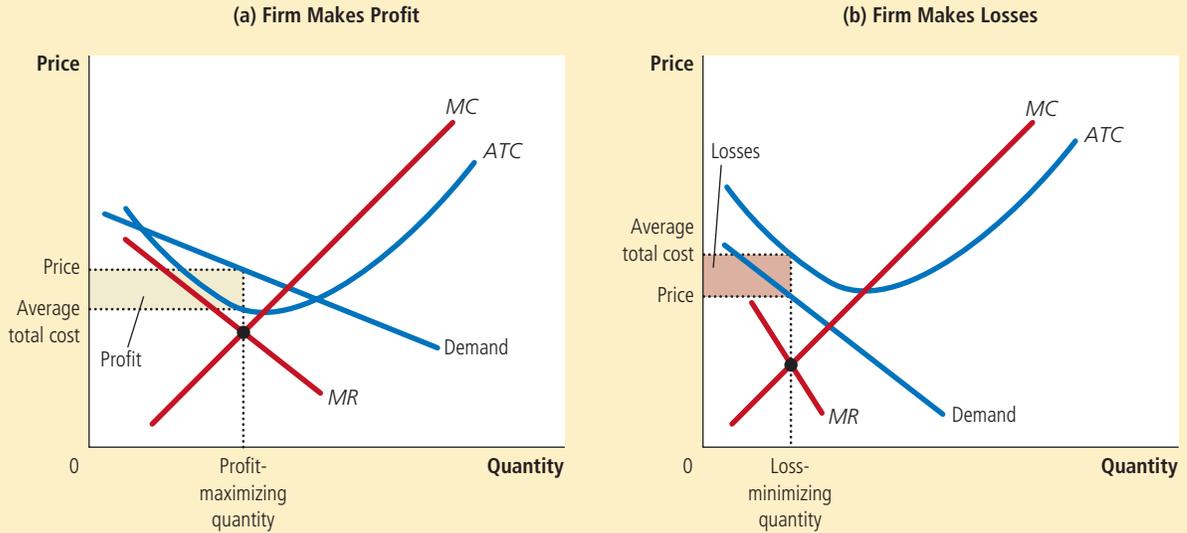
16-2b The Long-Run Equilibrium

The situations depicted in Figure 2 do not last long. When firms are making profits, as in panel (a), new firms have an incentive to enter the market. This entry

Monopolistic competitors, like monopolists, maximize profit by producing the quantity at which marginal revenue equals marginal cost. The firm in panel (a) makes a profit because, at this quantity, price is above average total cost. The firm in panel (b) makes losses because, at this quantity, price is less than average total cost.

FIGURE 2

Monopolistic Competitors in the Short Run



"GIVEN THE DOWNWARD SLOPE OF OUR DEMAND CURVE, AND THE EASE WITH WHICH OTHER FIRMS CAN ENTER THE INDUSTRY, WE CAN STRENGTHEN OUR PROFIT POSITION ONLY BY EQUATING MARGINAL COST AND MARGINAL REVENUE. ORDER MORE JELLY BEANS."

ScienceCartoonsPlus.com

increases the number of products from which customers can choose and, therefore, reduces the demand faced by each firm already in the market. In other words, profit encourages entry, and entry shifts the demand curves faced by the incumbent firms to the left. As the demand for incumbent firms' products falls, these firms experience declining profit.

Conversely, when firms are making losses, as in panel (b), firms in the market have an incentive to exit. As firms exit, customers have fewer products from which to choose. This decrease in the number of firms expands the demand faced by those firms that stay in the market. In other words, losses encourage exit, and exit shifts the demand curves of the remaining firms to the right. As the demand for the remaining firms' products rises, these firms experience rising profits (that is, declining losses).

This process of entry and exit continues until the firms in the market are making exactly zero economic profit. Figure 3 depicts the long-run equilibrium. Once the market reaches this equilibrium, new firms have no incentive to enter, and existing firms have no incentive to exit.

Notice that the demand curve in Figure 3 just barely touches the average-total-cost curve. Mathematically, we say the two curves are *tangent* to each other. These two curves must be tangent once entry and exit have driven profit to zero. Because profit per unit sold is the difference between price (found on the demand curve) and average total cost, the maximum profit is zero only if these two curves touch each other without crossing. Also note that this point of tangency occurs at the same quantity where marginal revenue equals marginal cost. That these two points line up is not a coincidence: It is required because this particular quantity maximizes profit and the maximum profit is exactly zero in the long run.

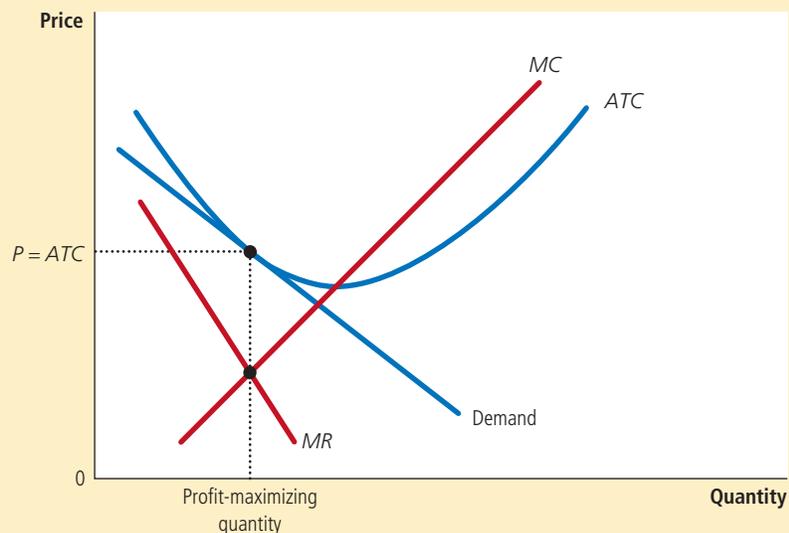
To sum up, two characteristics describe the long-run equilibrium in a monopolistically competitive market:

- As in a monopoly market, price exceeds marginal cost. This conclusion arises because profit maximization requires marginal revenue to equal marginal cost

FIGURE 3

A Monopolistic Competitor in the Long Run

In a monopolistically competitive market, if firms are making profits, new firms enter, and the demand curves for the incumbent firms shift to the left. Similarly, if firms are making losses, some of the firms in the market exit and the demand curves of the remaining firms shift to the right. Because of these shifts in demand, monopolistically competitive firms eventually find themselves in the long-run equilibrium shown here. In this long-run equilibrium, price equals average total cost and each firm earns zero profit.



and because the downward-sloping demand curve makes marginal revenue less than the price.

- As in a competitive market, price equals average total cost. This conclusion arises because free entry and exit drive economic profit to zero.

The second characteristic shows how monopolistic competition differs from monopoly. Because a monopoly is the sole seller of a product without close substitutes, it can earn positive economic profit, even in the long run. By contrast, because there is free entry into a monopolistically competitive market, the economic profit of a firm in this type of market is driven to zero.

16-2c Monopolistic versus Perfect Competition

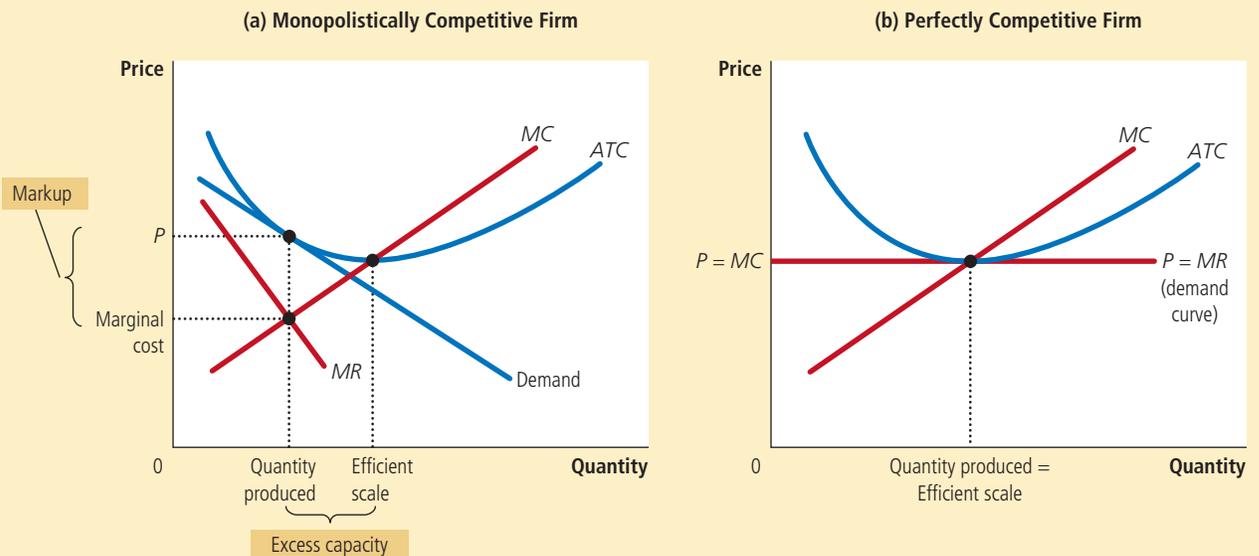
Figure 4 compares the long-run equilibrium under monopolistic competition to the long-run equilibrium under perfect competition. (Chapter 14 discussed the equilibrium with perfect competition.) There are two noteworthy differences between monopolistic and perfect competition: excess capacity and the markup.

Excess Capacity As we have just seen, the process of entry and exit drives each firm in a monopolistically competitive market to a point of tangency between its demand and average-total-cost curves. Panel (a) of Figure 4 shows that the quantity of output at this point is smaller than the quantity that minimizes average total cost. Thus, under monopolistic competition, firms produce on the downward-sloping

Panel (a) shows the long-run equilibrium in a monopolistically competitive market, and panel (b) shows the long-run equilibrium in a perfectly competitive market. Two differences are notable. (1) The perfectly competitive firm produces at the efficient scale, where average total cost is minimized. By contrast, the monopolistically competitive firm produces at less than the efficient scale. (2) Price equals marginal cost under perfect competition, but price is above marginal cost under monopolistic competition.

FIGURE 4

Monopolistic versus Perfect Competition



portion of their average-total-cost curves. In this way, monopolistic competition contrasts starkly with perfect competition. As panel (b) of Figure 4 shows, free entry in competitive markets drives firms to produce at the minimum of average total cost.

The quantity that minimizes average total cost is called the *efficient scale* of the firm. In the long run, perfectly competitive firms produce at the efficient scale, whereas monopolistically competitive firms produce below this level. Firms are said to have *excess capacity* under monopolistic competition. In other words, a monopolistically competitive firm, unlike a perfectly competitive firm, could increase the quantity it produces and lower the average total cost of production. The firm forgoes this opportunity because it would need to cut its price to sell the additional output. It is more profitable for a monopolistic competitor to continue operating with excess capacity.

Markup over Marginal Cost A second difference between perfect competition and monopolistic competition is the relationship between price and marginal cost. For a perfectly competitive firm, such as the one shown in panel (b) of Figure 4, price equals marginal cost. For a monopolistically competitive firm, such as the one shown in panel (a), price exceeds marginal cost because the firm always has some market power.

How is this markup over marginal cost consistent with free entry and zero profit? The zero-profit condition ensures only that price equals average total cost. It does *not* ensure that price equals marginal cost. Indeed, in the long-run equilibrium, monopolistically competitive firms operate on the declining portion of their average-total-cost curves, so marginal cost is below average total cost. Thus, for price to equal average total cost, price must be above marginal cost.

In this relationship between price and marginal cost, we see a key behavioral difference between perfect competitors and monopolistic competitors. Imagine that you were to ask a firm the following question: “Would you like to see another customer come through your door ready to buy from you at your current price?” A perfectly competitive firm would answer that it didn’t care. Because price exactly equals marginal cost, the profit from an extra unit sold is zero. By contrast, a monopolistically competitive firm is always eager to get another customer. Because its price exceeds marginal cost, an extra unit sold at the posted price means more profit.

According to an old quip, monopolistically competitive markets are those in which sellers send Christmas cards to the buyers. Trying to attract more customers makes sense only if price exceeds marginal cost.

16-2d Monopolistic Competition and the Welfare of Society

Is the outcome in a monopolistically competitive market desirable from the standpoint of society as a whole? Can policymakers improve on the market outcome? In previous chapters we evaluated markets from the standpoint of efficiency—that is, whether society is getting the most it can out of its scarce resources. We learned that competitive markets lead to efficient outcomes, unless there are externalities, whereas monopoly markets lead to deadweight losses. Monopolistically competitive markets are more complex than either of these polar cases, so evaluating welfare in these markets is a more subtle exercise.

One source of inefficiency is the markup of price over marginal cost. Because of the markup, some consumers who value the good at more than the marginal

cost of production (but less than the price) will be deterred from buying it. Thus, a monopolistically competitive market has the normal deadweight loss of monopoly pricing.

This outcome is undesirable compared with the efficient quantity that arises when price equals marginal cost, but policymakers don't have an easy way to fix the problem. To enforce marginal-cost pricing, they would need to regulate all firms that produce differentiated products. Because such products are so common in the economy, the administrative burden of such regulation would be overwhelming.

Moreover, regulating monopolistic competitors entails all the problems of regulating natural monopolies. In particular, because monopolistic competitors are making zero profits already, requiring them to lower their prices to equal marginal cost would cause them to make losses. To keep these firms in business, the government would need to help them cover these losses. Rather than raise taxes to pay for these subsidies, policymakers often decide it is better to live with the inefficiency of monopolistic pricing.

Another way in which monopolistic competition may be socially inefficient is that the number of firms in the market may not be "ideal." That is, there may be too much or too little entry. One way to think about this problem is in terms of the externalities associated with entry. Whenever a new firm considers entering the market with a new product, it takes into account only the profit it would make. Yet its entry would also have the following two effects that are external to the firm:

- *The product-variety externality:* Because consumers get some consumer surplus from the introduction of a new product, entry of a new firm conveys a positive externality on consumers.
- *The business-stealing externality:* Because other firms lose customers and profits from the entry of a new competitor, entry of a new firm imposes a negative externality on existing firms.

Thus, in a monopolistically competitive market, there are positive and negative externalities associated with the entry of new firms. Depending on which externality is larger, a monopolistically competitive market could have either too few or too many products.

Both of these externalities are closely related to the conditions for monopolistic competition. The product-variety externality arises because new firms offer products that differ from those of the existing firms. The business-stealing externality arises because firms post a price above marginal cost and, therefore, are always eager to sell additional units. Conversely, because perfectly competitive firms produce identical goods and charge a price equal to marginal cost, neither of these externalities exists under perfect competition.

In the end, we can conclude only that monopolistically competitive markets do not have all the desirable welfare properties of perfectly competitive markets. That is, the invisible hand does not ensure that total surplus is maximized under monopolistic competition. Yet because the inefficiencies are subtle, hard to measure, and hard to fix, there is no easy way for public policy to improve the market outcome.

Quick Quiz List the three key attributes of monopolistic competition. • Draw and explain a diagram to show the long-run equilibrium in a monopolistically competitive market. How does this equilibrium differ from that in a perfectly competitive market?

IN THE NEWS

Insufficient Variety as a Market Failure

In the presence of large fixed costs, the market may insufficiently serve customers with unusual preferences.

If the Shoe Doesn't Fit

By Joel Waldfogel

Last week, Nike unveiled a shoe designed specifically for American Indians. The sneaker has both a native-theme design and—more importantly—a wider shape to accommodate the distinctly shaped feet of American Indians. With diabetes and related conditions near epidemic levels in some tribes, American Indian leaders were happy to welcome this comfortable product. If anything, what seems odd is that it took so long. After all, free-market economists have told us for decades that we should rely on market decisions, not the government, to meet our needs, because it's the market that satisfies everyone's every desire.

And yet it turns out that it's the Indians' long wait for a good sneaker that's typical. For small groups with preferences outside the norm, the market often fails to deliver, as I argue in my new book, *The Tyranny of the Market: Why You Can't Always Get What You Want*.

John Stuart Mill pointed out that voting gives rise to a tyranny of the majority. If we vote on what color shirts to make—or whether to make wide or narrow shoes—then the majority gets what it prefers, and the minority does not. The market, on the other hand, is supposed to work differently. As Milton Friedman eloquently put it in 1962, “the characteristic feature of action through political channels is that it tends to require or enforce substantial conformity. The great advantage of the market is that it permits wide diversity. Each man can vote, as it were, for the color of tie he wants and get it; he does not have to see what color the majority wants and then, if he is in the minority, submit.” This is a wonderful argument. Except that for many products and for many people, it's wrong.

Two simple conditions that prevail in many markets mean that individual taste alone doesn't determine individual satisfaction. These conditions are (1) big setup costs and (2) preferences that differ across groups; when they're present, an individual's



satisfaction is a function of how many people share his or her tastes. In other words, in these cases, markets share some of the objectionable features of government. They give bigger groups more and better options.

In my research, I've discovered that this phenomenon is widespread. Ten years ago, I started studying radio-station listening patterns. I noticed that people listened to the radio more in metro areas of the United States with relatively large populations. This is not terribly surprising. In larger cities, more stations can attract enough listeners and advertising revenue to cover their costs and stay on the air. With more to choose from on the dial, residents tune in more. So, in this situation of high fixed costs (each station needs a following to keep broadcasting), people help one another by making more options viable.

But who benefits whom? When I looked at black and white listeners separately, I noticed something surprising. Blacks listen more in cities

16-3 Advertising

It is nearly impossible to go through a typical day in a modern economy without being bombarded with advertising. Whether you are surfing the Internet, posting on Facebook, reading a newspaper, watching television, or driving down the highway, some firm will try to convince you to buy its product. Such behavior is a natural feature of monopolistic competition (as well as some oligopolistic industries). When firms sell differentiated products and charge prices above marginal cost, each firm has an incentive to advertise to attract more buyers to its particular product.

The amount of advertising varies substantially across products. Firms that sell highly differentiated consumer goods, such as over-the-counter drugs, perfumes, soft drinks, razor blades, breakfast cereals, and dog food, typically spend between 10 and 20 percent of revenue on advertising. Firms that sell industrial products, such as drill presses and communications satellites, typically spend very little on advertising. And firms that sell homogeneous products, such as wheat, peanuts, and crude oil, spend nothing at all.

with larger black populations, and whites listen more in cities with larger white populations. Black listening does *not* increase where there's a higher white population, and white listening does not increase with a higher black population. Which means that while overall people help each other by increasing the number of stations on the dial, blacks do not help whites, and whites do not help blacks. Similar patterns arise for Hispanics and non-Hispanics.

A closer look at the data—necessary only because I'm a middle-aged white economist—showed why this was happening. Blacks and whites don't listen to the same radio stations. The black-targeted formats account for about two-thirds of black listening and only 3 percent of white listening. Similarly, the formats that attract the largest white audiences, like country, attract almost no blacks. This means that if you dropped Larry the Cable Guy and a few thousand of his friends from a helicopter (with parachutes) into a metro area, you'd create more demand for country and perhaps album-rock stations, which would be nice for white listeners. But the influx wouldn't help black listeners at all.

In this example, different population groups don't help each other, but they don't hurt each other, either. Sometimes, though, the effect that groups have on each other



AP Photos/Dan Ryan

through the market is actually negative. Industries like daily newspapers offer essentially one product per market. Because the paper can be pitched to appeal to one group or another, the larger one group is, the less the product is tailored to anyone else. This is the tyranny of the majority translated almost literally from politics into markets.

This brings us back to Nike's new shoe. Foot Locker is full of options that fit me and most other Americans. But American Indians make up just 1.5 percent of the U.S. population, and with feet on average three sizes wider, they need different-sized shoes. If we had all voted in a national election on whether the Ministry of Shoes should make wide or typical-width shoes, we surely would have chosen the latter. That's why Friedman

condemned government allocation. And yet the market made the same choice. If Nike's announcement looks like a solution to this problem of ignored minority preference, it really isn't. The company took too many years to bring the shoe on line, and according to the Associated Press, the new sneaker “represents less of a financial opportunity than a goodwill and branding effort.”

The tyranny of the market arises elsewhere. With drug development costs near \$1 billion, if you are going to be sick, hope that your disease is common enough to attract the interest of drug makers. If you want to fly from your town to Chicago, hope that your city is big enough to fill a plane every day.

When you're not so lucky, you benefit when the government steps in on your behalf, with subsidies for research on drugs for rare diseases or for air service to small locales. For a generation, influential economists have argued for letting the market decide a wide array of questions, to protect your freedom to choose whatever you want. This is true—if everyone agrees with you.

Mr. Waldfoegel is a professor of economics at the University of Pennsylvania. ▲

Source: *Slate*, Thursday, October 4, 2007.

For the economy as a whole, about 2 percent of total firm revenue is spent on advertising. This spending takes many forms, including ads on websites, television, radio, and billboards, and in newspapers, magazines, the yellow pages, and direct mail.

16-3a The Debate over Advertising

Is society wasting the resources it devotes to advertising? Or does advertising serve a valuable purpose? Assessing the social value of advertising is difficult and often generates heated argument among economists. Let's consider both sides of the debate.

The Critique of Advertising Critics of advertising argue that firms advertise to manipulate people's tastes. Much advertising is psychological rather than informational. Consider, for example, the typical television commercial for some brand of soft drink. The commercial most likely does not tell the viewer about the product's price or quality. Instead, it might show a group of happy people at a party on a beach on a beautiful sunny day. In their hands are cans of the soft drink. The goal of the commercial is to convey a subconscious (if not subtle) message: “You too can

have many friends and be happy, if you drink our product.” Critics of advertising argue that such a commercial creates a desire that otherwise might not exist.

Critics also argue that advertising impedes competition. Advertising often tries to convince consumers that products are more different than they truly are. By increasing the perception of product differentiation and fostering brand loyalty, advertising makes buyers less concerned with price differences among similar goods, thereby making the demand for a particular brand less elastic. When a firm faces a less elastic demand curve, it can increase its profits by charging a larger markup over marginal cost.

The Defense of Advertising Defenders of advertising argue that firms use advertising to provide information to customers. Advertising conveys the prices of the goods offered for sale, the existence of new products, and the locations of retail outlets. This information allows customers to make better choices about what to buy and, thus, enhances the ability of markets to allocate resources efficiently.

Defenders also argue that advertising fosters competition. Because advertising allows customers to be more fully informed about all the firms in the market, customers can more easily take advantage of price differences. Thus, each firm has less market power. In addition, advertising allows new firms to enter more easily because it gives entrants a means to attract customers from existing firms.

Over time, policymakers have come to accept the view that advertising can make markets more competitive. One important example is the regulation of advertising for certain professions, such as lawyers, doctors, and pharmacists. In the past, these groups succeeded in getting state governments to prohibit advertising in their fields on the grounds that advertising was “unprofessional.” In recent years, however, the courts have concluded that the primary effect of these restrictions on advertising was to curtail competition. They have, therefore, overturned many of the laws that prohibit advertising by members of these professions.

case study

Advertising and the Price of Eyeglasses

What effect does advertising have on the price of a good? On the one hand, advertising might make consumers view products as being more different than they otherwise would. If so, it would make markets less competitive and firms’ demand curves less elastic, and this would lead firms to charge higher prices. On the other hand, advertising might make it easier for consumers to find the firms offering the best prices. In this case, it would make markets more competitive and firms’ demand curves more elastic, which would lead to lower prices.

In an article published in the *Journal of Law and Economics* in 1972, economist Lee Benham tested these two views of advertising. In the United States during the 1960s, the various state governments had vastly different rules about advertising by optometrists. Some states allowed advertising for eyeglasses and eye examinations. Many states, however, prohibited it. For example, the Florida law read as follows:

It is unlawful for any person, firm, or corporation to ... advertise either directly or indirectly by any means whatsoever any definite or indefinite price or credit terms on prescriptive or corrective lens, frames, complete prescriptive or corrective glasses, or any optometric service.... This section is passed in the interest of public health, safety, and welfare, and its provisions shall be liberally construed to carry out its objects and purposes.

Professional optometrists enthusiastically endorsed these restrictions on advertising.

Benham used the differences in state law as a natural experiment to test the two views of advertising. The results were striking. In those states that prohibited advertising, the average price paid for a pair of eyeglasses was \$33, or \$248 in 2012 dollars. In states that did not restrict advertising, the average price was \$26, or \$196 in 2012 dollars. Thus, advertising reduced average prices by more than 20 percent. In the market for eyeglasses, and probably in many other markets as well, advertising fosters competition and leads to lower prices for consumers. ▲

16-3b Advertising as a Signal of Quality

Many types of advertising contain little apparent information about the product being advertised. Consider a firm introducing a new breakfast cereal. The firm might saturate the airwaves with advertisements showing some actor eating the cereal and exclaiming how wonderful it tastes. How much information does the advertisement really provide?

The answer is more than you might think. Defenders of advertising argue that even advertising that appears to contain little hard information may in fact tell consumers something about product quality. The willingness of the firm to spend a large amount of money on advertising can itself be a *signal* to consumers about the quality of the product being offered.

Consider the problem facing two firms—Post and Kellogg. Each company has just come up with a recipe for a new cereal, which it would sell for \$3 a box. To keep things simple, let's assume that the marginal cost of making cereal is zero, so the \$3 is all profit. Each company knows that if it spends \$10 million on advertising, it will get 1 million consumers to try its new cereal. And each company knows that if consumers like the cereal, they will buy it not once but many times.

First consider Post's decision. Based on market research, Post knows that its cereal tastes like shredded newspaper with sugar on top. Advertising would sell one box to each of 1 million consumers, but consumers would quickly learn that the cereal is not very good and stop buying it. Post decides it is not worth spending \$10 million on advertising to get only \$3 million in sales. So it does not bother to advertise. It sends its cooks back to the test kitchen to develop another recipe.

Kellogg, on the other hand, knows that its cereal is great. Each person who tries it will buy a box a month for the next year. Thus, the \$10 million in advertising will bring in \$36 million in sales. Advertising is profitable here because Kellogg has a good product that consumers will buy repeatedly. Thus, Kellogg chooses to advertise.

Now that we have considered the behavior of the two firms, let's consider the behavior of consumers. We began by asserting that consumers are inclined to try a new cereal that they see advertised. But is this behavior rational? Should a consumer try a new cereal just because the seller has chosen to advertise it?

In fact, it may be completely rational for consumers to try new products that they see advertised. In our story, consumers decide to try Kellogg's new cereal because Kellogg advertises. Kellogg chooses to advertise because it knows that its cereal is quite good, while Post chooses not to advertise because it knows that its cereal is not good at all. By its willingness to spend money on advertising, Kellogg signals to consumers the quality of its cereal. Each consumer thinks,



Image Courtesy of The Advertising Archives

Is it rational for consumers to be impressed that Ellen DeGeneres is endorsing this product?

quite sensibly, “Boy, if the Kellogg Company is willing to spend so much money advertising this new cereal, it must be really good.”

What is most surprising about this theory of advertising is that the content of the advertisement is irrelevant. Kellogg signals the quality of its product by its willingness to spend money on advertising. What the advertisements say is not as important as the fact that consumers know ads are expensive. By contrast, cheap advertising cannot be effective at signaling quality to consumers. In our example, if an advertising campaign cost less than \$3 million, both Post and Kellogg would use it to market their new cereals. Because both good and bad cereals would be advertised, consumers could not infer the quality of a new cereal from the fact that it is advertised. Over time, consumers would learn to ignore such cheap advertising.

This theory can explain why firms pay famous actors large amounts of money to make advertisements that, on the surface, appear to convey no information at all. The information is not in the advertisement’s content but simply in its existence and expense.

16-3c Brand Names

Advertising is closely related to the existence of brand names. In many markets, there are two types of firms. Some firms sell products with widely recognized brand names, while other firms sell generic substitutes. For example, in a typical drugstore, you can find Bayer aspirin on the shelf next to generic aspirin. In a typical grocery store, you can find Pepsi next to less familiar colas. Most often, the firm with the brand name spends more on advertising and charges a higher price for its product.

Just as there is disagreement about the economics of advertising, there is disagreement about the economics of brand names. Let’s consider both sides of the debate.

Critics argue that brand names cause consumers to perceive differences that do not really exist. In many cases, the generic good is almost indistinguishable from the brand-name good. Consumers’ willingness to pay more for the brand-name good, these critics assert, is a form of irrationality fostered by advertising. Economist Edward Chamberlin, one of the early developers of the theory of monopolistic competition, concluded from this argument that brand names were bad for the economy. He proposed that the government discourage their use by refusing to enforce the exclusive trademarks that companies use to identify their products.

More recently, economists have defended brand names as a useful way for consumers to ensure that the goods they buy are of high quality. There are two related arguments. First, brand names provide consumers with *information* about quality when quality cannot be easily judged in advance of purchase. Second, brand names give firms an *incentive* to maintain high quality because firms have a financial stake in maintaining the reputation of their brand names.

To see how these arguments work in practice, consider a famous brand name: McDonald’s hamburgers. Imagine that you are driving through an unfamiliar town and want to stop for lunch. You see a McDonald’s and a local restaurant next to it. Which do you choose? The local restaurant may in fact offer better food at lower prices, but you have no way of knowing that. By contrast, McDonald’s offers a consistent product across many cities. Its brand name is useful to you as a way of judging the quality of what you are about to buy.

The McDonald’s brand name also ensures that the company has an incentive to maintain quality. For example, if some customers were to become ill from



bad food sold at a McDonald's, the news would be disastrous for the company. McDonald's would lose much of the valuable reputation that it has built up with years of expensive advertising. As a result, it would lose sales and profit not just in the outlet that sold the bad food but in its many outlets throughout the country. By contrast, if some customers were to become ill from bad food at a local restaurant, that restaurant might have to close down, but the lost profits would be much smaller. Hence, McDonald's has a greater incentive to ensure that its food is safe.

The debate over brand names thus centers on the question of whether consumers are rational in preferring brand names to generic substitutes. Critics argue that brand names are the result of an irrational consumer response to advertising. Defenders argue that consumers have good reason to pay more for brand-name products because they can be more confident in the quality of these products.

Quick Quiz How might advertising make markets less competitive? How might it make markets more competitive? • Give the arguments for and against brand names.

16-4 Conclusion

Monopolistic competition is true to its name: It is a hybrid of monopoly and competition. Like a monopoly, each monopolistic competitor faces a downward-sloping demand curve and, as a result, charges a price above marginal cost. As in a perfectly competitive market, there are many firms, and entry and exit drive the profit of each monopolistic competitor toward zero in the long run. Table 1 summarizes these lessons.

Because monopolistically competitive firms produce differentiated products, each firm advertises to attract customers to its own brand. To some extent, advertising manipulates consumers' tastes, promotes irrational brand loyalty, and impedes competition. To a larger extent, advertising provides information, establishes brand names of reliable quality, and fosters competition.

The theory of monopolistic competition seems to describe many markets in the economy. It is somewhat disappointing, therefore, that the theory does not yield simple and compelling advice for public policy. From the standpoint of the economic theorist, the allocation of resources in monopolistically competitive markets is not perfect. Yet from the standpoint of a practical policymaker, there may be little that can be done to improve it.

TABLE 1

**Monopolistic Competition:
Between Perfect Competition
and Monopoly**

	Market Structure		
	Perfect Competition	Monopolistic Competition	Monopoly
Features that all three market structures share			
Goal of firms	Maximize profits	Maximize profits	Maximize profits
Rule for maximizing profit	$MR = MC$	$MR = MC$	$MR = MC$
Can earn economic profits in the short run?	Yes	Yes	Yes
Features that monopolistic competition shares with monopoly			
Price taker?	Yes	No	No
Price	$P = MC$	$P > MC$	$P > MC$
Produces welfare-maximizing level of output?	Yes	No	No
Features that monopolistic competition shares with competition			
Number of firms	Many	Many	One
Entry in the long run?	Yes	Yes	No
Can earn economic profits in the long run?	No	No	Yes

Summary

- A monopolistically competitive market is characterized by three attributes: many firms, differentiated products, and free entry.
- The long-run equilibrium in a monopolistically competitive market differs from that in a perfectly competitive market in two related ways. First, each firm in a monopolistically competitive market has excess capacity. That is, it chooses a quantity that puts it on the downward-sloping portion of the average-total-cost curve. Second, each firm charges a price above marginal cost.
- Monopolistic competition does not have all the desirable properties of perfect competition. There is the standard deadweight loss of monopoly caused by the markup of price over marginal cost. In addition, the number of firms (and thus the variety of products) can be too large or too small. In practice, the ability of policymakers to correct these inefficiencies is limited.
- The product differentiation inherent in monopolistic competition leads to the use of advertising and brand names. Critics of advertising and brand names argue that firms use them to manipulate consumers' tastes and to reduce competition. Defenders of advertising and brand names argue that firms use them to inform consumers and to compete more vigorously on price and product quality.

Key Concepts

oligopoly, p. 330

monopolistic competition, p. 330

Questions for Review

- Describe the three attributes of monopolistic competition. How is monopolistic competition like monopoly? How is it like perfect competition?
- Draw a diagram depicting a firm that is making a profit in a monopolistically competitive market. Now show what happens to this firm as new firms enter the industry.
- Draw a diagram of the long-run equilibrium in a monopolistically competitive market. How is price related to average total cost? How is price related to marginal cost?
- Does a monopolistic competitor produce too much or too little output compared to the most efficient level? What practical considerations make it difficult for policymakers to solve this problem?
- How might advertising reduce economic well-being? How might advertising increase economic well-being?
- How might advertising with no apparent informational content in fact convey information to consumers?
- Explain two benefits that might arise from the existence of brand names.

Quick Check Multiple Choice

- Which of the following conditions does NOT describe a firm in a monopolistically competitive market?
 - It makes a product different from its competitors.
 - It takes its price as given by market conditions.
 - It maximizes profit both in the short run and in the long run.
 - It has the freedom to enter or exit in the long run.
- Which of the following goods best fits the definition of monopolistic competition?
 - wheat
 - tap water
 - crude oil
 - soft drinks
- A monopolistically competitive firm will increase its production if
 - marginal revenue is greater than marginal cost.
 - marginal revenue is greater than average total cost.
 - price is greater than marginal cost.
 - price is greater than average total cost.
- New firms will enter a monopolistically competitive market if
 - marginal revenue is greater than marginal cost.
 - marginal revenue is greater than average total cost.
 - price is greater than marginal cost.
 - price is greater than average total cost.
- What is true of a monopolistically competitive market in long-run equilibrium?
 - Price is greater than marginal cost.
 - Price is equal to marginal revenue.
 - Firms make positive economic profits.
 - Firms produce at the minimum of average total cost.
- If advertising makes consumers more loyal to particular brands, it could _____ the elasticity of demand and _____ the markup of price over marginal cost.
 - increase, increase
 - increase, decrease
 - decrease, increase
 - decrease, decrease

Problems and Applications

- Among monopoly, oligopoly, monopolistic competition, and perfect competition, how would you classify the markets for each of the following drinks?
 - tap water
 - bottled water
 - cola
 - beer
- Classify the following markets as perfectly competitive, monopolistic, or monopolistically competitive, and explain your answers.
 - wooden no. 2 pencils
 - copper
 - local electricity service
 - peanut butter
 - lipstick
- For each of the following characteristics, say whether it describes a perfectly competitive firm, a monopolistically competitive firm, both, or neither.
 - sells a product differentiated from that of its competitors
 - has marginal revenue less than price
 - earns economic profit in the long run
 - produces at the minimum of average total cost in the long run
 - equates marginal revenue and marginal cost
 - charges a price above marginal cost

4. For each of the following characteristics, say whether it describes a monopoly firm, a monopolistically competitive firm, both, or neither.
- faces a downward-sloping demand curve
 - has marginal revenue less than price
 - faces the entry of new firms selling similar products
 - earns economic profit in the long run
 - equates marginal revenue and marginal cost
 - produces the socially efficient quantity of output
5. You are hired as the consultant to a monopolistically competitive firm. The firm reports the following information about its price, marginal cost, and average total cost. Can the firm possibly be maximizing profit? If not, what should it do to increase profit? If the firm is profit maximizing, is the firm in a long-run equilibrium? If not, what will happen to restore long-run equilibrium?
- $P < MC, P > ATC$
 - $P > MC, P < ATC$
 - $P = MC, P > ATC$
 - $P > MC, P = ATC$
6. Sparkle is one firm of many in the market for toothpaste, which is in long-run equilibrium.
- Draw a diagram showing Sparkle's demand curve, marginal-revenue curve, average-total-cost curve, and marginal-cost curve. Label Sparkle's profit-maximizing output and price.
 - What is Sparkle's profit? Explain.
 - On your diagram, show the consumer surplus derived from the purchase of Sparkle toothpaste. Also show the deadweight loss relative to the efficient level of output.
 - If the government forced Sparkle to produce the efficient level of output, what would happen to the firm? What would happen to Sparkle's customers?
7. Consider a monopolistically competitive market with N firms. Each firm's business opportunities are described by the following equations:
- $$\text{Demand: } Q = 100/N - P$$
- $$\text{Marginal Revenue: } MR = 100/N - 2Q$$
- $$\text{Total Cost: } TC = 50 + Q^2$$
- $$\text{Marginal Cost: } MC = 2Q$$
- How does N , the number of firms in the market, affect each firm's demand curve? Why?
 - How many units does each firm produce? (The answers to this and the next two questions depend on N .)
 - What price does each firm charge?
 - How much profit does each firm make?
 - In the long run, how many firms will exist in this market?
8. The market for peanut butter in Nutville is monopolistically competitive and in long-run equilibrium. One day, consumer advocate Skippy Jif discovers that all brands of peanut butter in Nutville are identical. Thereafter, the market becomes perfectly competitive and again reaches its long-run equilibrium. Using an appropriate diagram, explain whether each of the following variables increases, decreases, or stays the same for a typical firm in the market.
- price
 - quantity
 - average total cost
 - marginal cost
 - profit
9. For each of the following pairs of firms, explain which firm would be more likely to engage in advertising.
- a family-owned farm or a family-owned restaurant
 - a manufacturer of forklifts or a manufacturer of cars
 - a company that invented a very comfortable razor or a company that invented a less comfortable razor
10. Sleek Sneakers Co. is one of many firms in the market for shoes.
- Assume that Sleek is currently earning short-run economic profit. On a correctly labeled diagram, show Sleek's profit-maximizing output and price, as well as the area representing profit.
 - What happens to Sleek's price, output, and profit in the long run? Explain this change in words, and show it on a new diagram.
 - Suppose that over time consumers become more focused on stylistic differences among shoe brands. How would this change in attitudes affect each firm's price elasticity of demand? In the long run, how will this change in demand affect Sleek's price, output, and profit?
 - At the profit-maximizing price you identified in part (c), is Sleek's demand curve elastic or inelastic? Explain.

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