Monopolistic Competition and Product Differentiation

1. Use the three conditions for monopolistic competition discussed in the chapter to decide which of the following firms are likely to be operating as monopolistic competitors. If they are not monopolistically competitive firms, are they monopolists, oligopolists, or perfectly competitive firms?
   a. A local band that plays for weddings, parties, and so on
   b. Minute Maid, a producer of individual-serving juice boxes
   c. Your local dry cleaner
   d. A farmer who produces soybeans

Solution:

1. The three conditions for monopolistic competition are (1) a large number of producers, (2) differentiated products, and (3) free entry and exit.
   a. There are many bands that play at weddings, parties, and so on. There are no significant barriers to entry or exit. And products are differentiated by quality (for instance, some bands have better musicians or better electronic equipment) or by style (for instance, different bands play different types of music). All three conditions for monopolistic competition are fulfilled.
   b. The industry for individual-serving juice boxes is dominated by a few very large firms (for example, Minute Maid, Welch’s, and Kool Aid), and there are significant barriers to entry, in part because of the large costs (for example, advertising) involved in gaining any market share of the national market. Products are, however, differentiated—in some cases, the only differences are in the minds of consumers. Because of the small number of competitors, the industry is closer to oligopoly.
   c. There are a large number of dry cleaners, and each produces a product differentiated by location: customers are likely to prefer to use the dry cleaner closest to their home or workplace. Finally, there are no significant barriers to entry. This is a monopolistically competitive market.
   d. There are a large number of soybean farmers, and there is free entry and exit in this industry. However, soybeans are not differentiated from each other—they are a standardized product. No individual soybean farmer has market power. This industry is therefore a perfectly competitive industry.

2. You are thinking of setting up a coffee shop. The market structure for coffee shops is monopolistic competition. There are three Starbucks shops and two other coffee shops very much like Starbucks in your town already. In order for you to have some degree of market power, you may want to differentiate your coffee shop. Thinking about the three different ways in which products can be differentiated, explain how you would decide whether you should copy Starbucks or whether you should sell coffee in a completely different way.
2. There are three ways in which you can differentiate your product: by style or type, by location, and by quality.

If you decide to copy Starbucks both in style (for example, you copy the décor of the shop and the service) and in quality (for example, you serve coffee made from the same coffee beans, brewed in exactly the same way), you will still most likely differentiate your product by location: your coffee shop will be closer for some people than any of the other shops, and that gives you some degree of market power.

But you could further differentiate your product by style (for example, you could serve coffee in porcelain cups brought to the table by waiters) or by quality (for example, you could serve only organic, shade-grown coffee). All these will help you create a differentiated product that gives you more market power—that is, the power to raise prices. You would, of course, need to determine whether it allows you to raise prices sufficiently to cover the cost of paying for waiters and higher-quality coffee.

3. The restaurant business in town is a monopolistically competitive industry in long-run equilibrium. One restaurant owner asks for your advice. She tells you that, each night, not all tables in her restaurant are full. She also tells you that she would attract more customers if she lowered the prices on her menu and that doing so would lower her average total cost. Should she lower her prices? Draw a diagram showing the demand curve, marginal revenue curve, marginal cost curve, and average total cost curve for this restaurant to explain your advice. Show in your diagram what would happen to the restaurant owner’s profit if she were to lower the price so that she sells the minimum-cost output.

Solution

3. She should not lower her price. Since the industry is in long-run equilibrium, each restaurant makes zero profit. That is, the restaurant’s demand, marginal revenue, marginal cost, and average total cost curves are as shown in the accompanying diagram.

The restaurant owner produces output (the number of tables served) $Q_{MC}$ at a price of $P_{MC}$. The price is equal to average total cost, so she makes zero profit. If she were to lower the price to $P_1$, she would attract more customers and sell the minimum-cost output $Q_1$. That is, there is excess capacity: each restaurant in town could produce more output at a lower average total cost. But lowering the price to $P_1$ would cause the restaurant owner to incur a loss equal to the shaded rectangle in the diagram, since price is now below average total cost, $ATC_1$. In fact, there is no price other than $P_{MC}$ at which the restaurant owner does not incur a loss. So she should not change the prices on her menu.
4. The market structure of the local gas station industry is monopolistic competition. Suppose that currently each gas station incurs a loss. Draw a diagram for a typical gas station to show this short-run situation. Then, in a separate diagram, show what will happen to the typical gas station in the long run. Explain your reasoning.

Each gas station will produce the output, and so charge the price, that maximizes its profit or minimizes its loss. That is, it will produce quantity $Q_U$, where marginal cost equals marginal revenue, and so charge price $P_U$. Since the price $P_U$ is lower than average total cost at the quantity $Q_U$, $ATC_U$, each gas station incurs a loss. That is, the situation for the typical gas station looks like the accompanying diagram.

Since gas stations are incurring losses, in the long run some will exit the industry. This shifts the demand and marginal revenue curves for each of the remaining gas stations rightward. Exit continues until each remaining gas station makes zero profit. This is the long-run equilibrium. The situation for the typical gas station in this equilibrium is illustrated in the accompanying diagram. Demand has increased to the level at which this gas station makes zero profit at a price of $P_{MC}$ and a quantity of $Q_{MC}$.

5. The local hairdresser industry has the market structure of monopolistic competition. Your hairdresser boasts that he is making a profit and that if he continues to do so, he will be able to retire in five years. Use a diagram to illustrate your hairdresser’s current situation. Do you expect this to last? In a separate diagram, draw what you expect to happen in the long run. Explain your reasoning.
5. Your hairdresser currently makes a profit. His demand, marginal revenue, marginal cost, and average total cost curves are shown in the accompanying diagram.

Since this hairdresser (and all other hairdressers) makes a profit equal to the shaded rectangle by producing quantity \( Q_p \) at a price \( P_p \), there will be entry into this industry. As more hairdressers open shops in town, demand for the typical existing hairdresser will fall—the demand curve and marginal revenue curve shift leftward. This will continue to the point at which no hairdresser makes positive profit. This eliminates the incentive for further entry into the industry, and long-run equilibrium is reached. The situation is illustrated in the accompanying diagram.

The best the typical hairdresser can do is to produce quantity \( Q_{MC} \) at a price of \( P_{MC} \). Since price equals average total cost at this quantity, each hairdresser will make exactly zero profit.

6. Magnificent Blooms is a florist in a monopolistically competitive industry. It is a successful operation, producing the quantity that minimizes its average total cost and making a profit. The owner also says that at its current level of output, its marginal cost is above marginal revenue. Illustrate the current situation of Magnificent Blooms in a diagram. Answer the following questions by illustrating with a diagram.

a. In the short run, could Magnificent Blooms increase its profit?
b. In the long run, could Magnificent Blooms increase its profit?
6. The current situation of Magnificent Blooms is illustrated in the accompanying diagram. It produces quantity $Q_1$ at the minimum point of its average total cost curve, and it charges price $P_1$, making profit equal to the shaded rectangular area.

![Diagram showing cost and revenue curves with shaded area representing profit]

a. Yes, Magnificent Blooms could increase its profit in the short run by producing less. It would maximize its profit by producing quantity $Q_P$, the quantity at which marginal revenue equals marginal cost, and selling it at a price $P_P$, making a profit equal to the striped area.

b. No. In the long run, Magnificent Blooms will make zero profit. The fact that it is making profits in the short run induces other firms to enter the industry. In the long run, this shifts its demand curve and marginal revenue curve leftward to the point where it makes zero profit, as shown in the accompanying diagram.

![Diagram showing long-run balance with zero profit]

7. "In the long run, there is no difference between monopolistic competition and perfect competition." Discuss whether this statement is true, false, or ambiguous with respect to the following criteria.

a. The price charged to consumers
b. The average total cost of production
c. The efficiency of the market outcome
d. The typical firm’s profit in the long run
7. a. According to this criterion, the statement is false. The price charged to consumers is higher in monopolistic competition than it is in perfect competition. All firms in a perfectly competitive market will charge a price equal to marginal cost and equal to minimum average total cost, the lowest point on the average total cost curve. The typical firm in a monopolistically competitive industry will charge a price that is higher than marginal cost and also higher than minimum average total cost.

b. According to this criterion, the statement is false. The average total cost of production is higher for a monopolistically competitive firm than for a perfectly competitive firm. For a perfectly competitive firm in the long run, there is no way of lowering the average total cost of production: it produces at minimum average total cost. Monopolistically competitive firms, however, have excess capacity: if they were to produce more, they could lower their average total cost, but this would result in a reduction in profit or a loss.

c. According to this criterion, the statement is ambiguous. The market outcome under perfect competition is clearly efficient: price equals marginal cost, so no firm wants to produce more output at a price at which consumers want to buy more output. That is, no mutually beneficial trades between consumers and producers go unexploited. The efficiency of monopolistic competition, however, is ambiguous. In the market outcome, price exceeds marginal cost, so there are beneficial trades that go unexploited in this case. But consumers also gain from the variety of products that monopolistic competition provides, which is not the case under perfect competition. So it is ambiguous whether consumers are better or worse off when an industry is monopolistically competitive.

d. According to this criterion, the statement is true. Both perfectly competitive firms and monopolistically competitive firms earn zero profits in the long run, since entry into (or exit from) the industry eliminates all profits (or, in the case of exit, transforms losses to zero profit). In this respect, perfect competition and monopolistic competition are similar.

8. “In both the short run and in the long run, the typical firm in monopolistic competition and a monopolist each make a profit.” Do you agree with this statement? Explain your reasoning.

8. In the short run, a monopolist makes positive profit. Whether a firm in monopolistic competition makes a profit depends on how many firms there are in the industry. If there are “too few” firms in the industry (relative to the long-run equilibrium number of firms), then a typical firm in monopolistic competition will make a profit. But if there are “too many” firms in the industry (relative to the long-run equilibrium number of firms), then a typical firm in monopolistic competition will incur a loss in the short run.

In the long run, a monopolist makes positive profit. But in the long-run equilibrium in a monopolistically competitive industry, all firms make zero profit. This is because in the long run in a monopolistically competitive industry, enough firms have entered or exited the market to shift a typical firm’s demand curve so that it is tangent to the firm’s average total cost curve at the firm’s profit-maximizing quantity. The typical firm makes zero profit.

9. The market for clothes has the structure of monopolistic competition. What impact will fewer firms in this industry have on you as a consumer? Address the following issues.

a. Variety of clothes

b. Differences in quality of service

c. Price
9. a. In monopolistic competition, firms seek to differentiate themselves by, among other things, the type of clothes they sell. And to you, as a customer, there is value in diversity: many consumers value being able to wear clothes that are different from those the people around them wear. If there are fewer firms in this industry, there will also be less variety.

b. Monopolistically competitive firms also seek to differentiate themselves through the quality of service they offer. There will be stores that take your measurements before making specific recommendations about which clothes to buy. And there will be stores where you help yourself to clothes piled in a heap on a big table. If there are fewer firms in this industry, there will be less diversity in service quality. It will be less likely that each consumer finds a store with just the quality of service he or she prefers.

c. If there are fewer firms in this industry, each firm will sell a greater quantity and so have lower average total cost of production. As a result, it is likely that prices will also be lower. From this perspective, you might prefer to have fewer firms.

10. For each of the following situations, decide whether advertising is directly informative about the product or simply an indirect signal of its quality. Explain your reasoning.

a. Football great Peyton Manning drives a Buick in a TV commercial and claims that he prefers it to any other car.

b. A newspaper ad states, "For sale: 1999 Honda Civic, 160,000 miles, new transmission."

c. McDonald’s spends millions of dollars on an advertising campaign that proclaims: "I’m lovin’ it."

d. Subway advertises one of its sandwiches by claiming that it contains 6 grams of fat and fewer than 300 calories.

11. In each of the following cases, explain how the advertisement functions as a signal to a potential buyer. Explain what information the buyer lacks that is being supplied by the advertisement and how the information supplied by the advertisement is likely to affect the buyer’s willingness to buy the good.

a. “Looking for work. Excellent references from previous employers available.”

b. “Electronic equipment for sale. All merchandise carries a one-year, no-questions-asked warranty.”

c. “Car for sale by original owner. All repair and maintenance records available.”
11. a. The seller here is the job-seeker, who is selling his or her labor to a potential employer. The potential employer lacks information on how good an employee the job-seeker is—how dependable, diligent, and so on. By being willing to provide excellent references from previous employers, the job-seeker signals that he or she is a good employee. As a result, the potential employer is more willing to hire that person.

b. The potential buyer lacks information on how good the merchandise is. By being willing to provide a one-year, no-questions-asked warranty, the seller signals to the potential buyer that the merchandise is of high quality. As a result, the potential buyer is more willing to buy the good.

c. The potential buyer lacks information on how good the used car is. By being willing to provide the repair and maintenance records, the seller signals to the potential buyer that this is a good-quality used car. As a result, the potential buyer is more willing to buy it.

12. The accompanying table shows the Herfindahl–Hirschman Index (HHI) for the restaurant, cereal, movie, and laundry detergent industries as well as the advertising expenditures of the top 10 firms in each industry in 2006. Use the information in the table to answer the following questions.

<table>
<thead>
<tr>
<th>Industry</th>
<th>HHI</th>
<th>Advertising expenditures (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurants</td>
<td>179</td>
<td>$1,784</td>
</tr>
<tr>
<td>Cereal</td>
<td>2,098</td>
<td>732</td>
</tr>
<tr>
<td>Movie studios</td>
<td>918</td>
<td>3,324</td>
</tr>
<tr>
<td>Laundry detergent</td>
<td>2,068</td>
<td>132</td>
</tr>
</tbody>
</table>

a. Which market structure—oligopoly or monopolistic competition—best characterizes each of the industries?

b. Based on your answer to part a, which type of market structure has higher advertising expenditures? Use the characteristics of each market structure to explain why this relationship might exist.

12. a. Recall from Chapter 14 that according to Justice Department guidelines, an HHI below 1,000 indicates a strongly competitive market, an HHI between 1,000 and 1,800 indicates a somewhat competitive market, and an HHI over 1,800 indicates an oligopoly. So you should expect monopolistically competitive industries to have an HHI below 1,000 and oligopolies to have an HHI above 1,800. So the four industries are:

   Restaurants: HHI below 1,000—monopolistic competition
   Cereal: HHI over 1,800—oligopoly
   Movie studios: HHI below 1,000—monopolistic competition
   Laundry detergent: HHI over 1,800—oligopoly

b. The market structure and advertising expenditures in each of the four industries correlate as follows:

   Restaurants: monopolistic competition and high advertising expenditures
   Cereal: oligopoly and medium advertising expenditures
   Movie studios: monopolistic competition and high advertising expenditures
   Laundry detergent: oligopoly and low advertising expenditures
There are higher advertising expenditures in the two monopolistically competitive industries—restaurants and movie studios. Monopolistically competitive firms advertise in order to earn short-run profits through product differentiation. Because there are no barriers to entry in monopolistic competition, firms must advertise and differentiate their products in order to earn short-run profits. There are lower advertising expenditures in the two oligopolistic industries, cereal and laundry detergents. They can advertise less because oligopolistic industries have barriers to entry and therefore do not need to rely on product differentiation to counter entry into the market.

13. McDonald’s spends millions of dollars each year on legal protection of its brand name, thereby preventing any unauthorized use of it. Explain what information this conveys to you as a consumer about the quality of McDonald’s products.

Solution

The fast-food industry is a monopolistically competitive one, and companies attempt to differentiate their product from that of other firms. McDonald’s invests money in maintaining its brand name, which differentiates it from other companies. The amount of money spent on creating and maintaining a brand name does not convey any specific information about McDonald’s products. But it does convey, indirectly, that McDonald’s is in this market for the long haul, that it has a reputation to protect, and that it will interact repeatedly with its customers. In this sense, the amount of money spent on maintaining a brand name signals to you as a consumer that McDonald’s will provide products of consistent quality.