use it as often. Even to visit each park once, the Florida resident is able to spend $42.75 per visit with a $171.00 pass, compared to $48.75 per visit for nonresidents. The price-cost margins are much higher for nonresidents, who have the more inelastic demand. It is apparent from the different types of admissions listed here that Disney also uses various methods of second-degree price discrimination by offering both Florida residents and nonresidents many different types of passes. In fact, the options listed are a relatively small sample of all the various pricing options available.

15.2 Two-Part Tariffs, Tying, and Bundling

Among the most common forms of second-degree price discrimination are two-part tariffs, tying, and bundling. While the three concepts are closely related, they are technically different. A two-part tariff consists of a lump sum payment for a good or service combined with a per unit user charge. Common examples include a rental charge for a copier and a per-copy fee; a golf club that charges a membership fee and a greens fee per round; and an amusement park that charges an entrance fee and a per-attraction charge.

Under a tie-in sales agreement consumers can purchase a good only if they agree to purchase another good. Tie-in sales agreements are subdivided into two types: package tie-in sales, typically called bundling; and requirements tie-in sales. Bundling is a tying agreement in which the goods are purchased in fixed proportions. The most important recent example is the bundling of Microsoft's Windows operating system with Microsoft's Internet Explorer browser. Another important example is a restaurant that serves only a fixed-price menu including an appetizer, salad, entrée, and dessert.

Requirements tie-in sales consist of a tying agreement in which the goods are purchased in variable proportions. Examples include can manufacturers leasing their can-closing equipment only to customers who agree to purchase all of their cans from the manufacturer; IBM leasing its old punch-card tabulating machines only to customers who agreed to purchase all of their punch-cards from IBM; and McDonald's requiring its franchisees to purchase all of their paper cups from McDonald's.

Because each of these types of price discrimination has different economic impacts, it is useful to analyze them separately.

15.2.1 Two-Part Tariffs

Consider a market for copying machines that consists of equal numbers of two types of consumers. Type A consumers have the following monthly demand for copies:

$$ P = 100 - q_A $$

Type B consumers have the following monthly demand for copies:

$$ P = 100 - 2q_B $$

These monthly demand curves are shown in Figure 15.6(a) and Figure 15.6(b).

Assume the monthly fixed costs of renting the machine are $500 and the marginal cost per copy is zero. What is the maximum monthly rental each type of consumer
would pay for the copying machine? With first-degree price discrimination each type of consumer would pay a maximum rental fee equal to total consumer surplus obtained if the price per copy was equal to marginal cost, which equals zero in this case. From Figure 15.6(a), Type A consumers would pay a maximum of:

$$CS_A = \frac{1}{2} (100)(100) = 5000.$$ 

From Figure 15.6(b), Type B consumers would pay a maximum of:

$$CS_B = \frac{1}{2} (100)(50) = 2500.$$ 

To simplify the analysis, assume there is one consumer of each type. The single-price options for the monopolist are either to charge a rental fee of 5000 and rent only to the Type A consumer, or to charge a rental fee of 2500 and rent to both the Type A and Type B consumers. From the monopolist’s perspective, which pricing system is best depends on which system maximizes profits.

Consider setting the rental fee equal to 5000 and renting only to the Type A consumer. Profits would be:

$$\Pi_A = 5000 - 500 = 4500.$$ 

Alternatively, setting the rental fee equal to 2500 and renting to both Type A and Type B consumers results in profits equal to:

$$\Pi_A + \Pi_B = 2(2500 - 500) = 4000.$$
In this case the monopolist maximizes profits by charging the higher rental fee, \( P = 5000 \), and renting only to the Type A consumer. The Type B consumer is priced out of the market.

Next we show that by using a two-part tariff, the monopolist’s profits can be increased. Suppose the monopolist decides to charge both a fixed monthly rental fee and a per-copy charge to both Type A and Type B consumers. The profit-maximizing combination of a fixed monthly rental fee and a per-copy charge is illustrated in Figure 15.7. The monopolist should charge a per-copy fee equal to 25 and a fixed fee of 1406.25 to each consumer. This fixed fee equals the consumer surplus for the low-demand Type B consumer if the per-copy charge is 25. Profits then equal:

\[
\Pi = 2(\text{fixed fee}) + p(q_A + q_B) - 2(\text{fixed costs}) \\
= 2(1406.25) + 25(75 + 37.5) - 2(500) \\
= (2812.50) + (2812.5) - (1000) = 4625.
\]

Using a two-part tariff increases profits from 4500 to 4625 despite the dramatic reduction in the monthly rental fee from 5000 to 1406.25. The reduced rental fee attracts the Type B consumer into the market. The monopolist more than makes up for the reduction in the rental fee by charging a per-copy fee greater than zero.

### 15.2.2 The Welfare Effects of a Two-Part Tariff

Consider the welfare effects of the two-part tariff above. In the absence of the two-part tariff, the monopolist maximized profits by charging a fixed fee of 5000 and a per-copy fee of zero. In this case, consumer surplus equals zero and profits equal:

\[
\Pi = TR - TC = 5000 - 500 = 4500.
\]

The sum of consumer surplus plus profit, therefore, equals 4500.

**If both consumers are to rent copies, the rental fee must be set at the consumer surplus for the low-demand Type B consumer. If \( p \) represents the price per copy, then from Figure 15.7(b):

\[
CS_B = \frac{1}{2}(100 - p)q = \frac{1}{2}(100 - p)\left(\frac{50}{2} - \frac{1}{2}p\right).
\]

Summing the two demand curves, the total demand for copies by both consumers can be obtained as follows:

\[
p = 100 - q_A \quad \text{and} \quad p = 100 - 2q_B
\]

or

\[
q_A = 100 - p \quad \text{and} \quad q_B = \frac{50 - p}{2}.
\]

so

\[
q = (q_A + q_B) = 150 - \frac{3p}{2}.
\]

The monopolist’s profits, \( \Pi \), are then:

\[
\Pi = TR - TC = [\text{rental fees paid by both consumers} + pq] - 1000 \\
= \left[(100 - p)\left(\frac{50}{2} - \frac{1}{2}p\right) + p\left(\frac{50}{2} - \frac{3}{2}p\right)\right] - 1000 - 4000 + 500p - p^2.
\]

We can now use calculus to maximize profits. Differentiate profits with respect to \( p \) and set equal to zero:

\[
\frac{d\Pi}{dp} = 50 - 2p = 0 \Rightarrow p = 25.
\]
FIGURE 15.7  Consumer Surplus, Type A and Type B Consumers, Respectively

In panel (a) Type A consumers have demand \( P = 100 - q \), and in panel (b) Type B consumers have demand \( P = 100 - 2q \). To maximize profit, the monopolist charges a per-copy charge \( p = 25 \) and a fixed fee equal to 1406.25, which equals the consumer surplus in the low-demand market in panel (b). Total profit is 4625, which is greater than the profit of 4500 associated with charging a fixed fee of 5000 to Type A consumers and pricing Type B consumers out of the market.

The use of a profit-maximizing two-part tariff results in a fixed fee of 1406.25 plus a per-copy charge of 25. The Type B consumer receives no consumer surplus because the fixed fee equals the triangle EFG in Figure 15.7(b). However, the Type A consumer receives consumer surplus because she pays less than the maximum amount she would be willing to pay for 75 copies. With a per-copy charge of 25 and no rental fee, a Type A consumer would receive consumer surplus of \( \Delta ABC = 2812.5 \). The monopolist is able to capture part of this consumer surplus with the fixed rental fee of 1406.25. Remember that the rental fee cannot be higher than this without driving the Type B consumer out of the market. The Type A consumer, therefore, receives consumer surplus equal to \( 2812.5 - 1406.25 = 1406.25 \).

The monopolist’s profits were previously calculated to be 4625 under the two-part tariff. Therefore, the sum of consumer surplus and monopoly profits with a two-part tariff equals:

\[
CS + \Pi = 1406.25 + 4625 = 6031.25.
\]

*The following is an alternative method of calculating the Type A consumer’s consumer surplus. In Figure 15.7(a) the maximum amount that the Type A consumer would pay for 75 copies is represented by the trapezoid ABD0, which equals:

\[
\text{Area ABD0} = \frac{1}{2}(75)(100 + 25) = 4687.5.
\]

The Type A consumer pays a fixed fee of 1406.25 plus a per-copy charge of \( pq = (75)(25) = 1875 \), or a total payment of 3281.25. The Type A consumer, therefore, receives consumer surplus equal to \( (4687.5 - 3281.25) = 1406.25 \).
The two-part tariff has increased the sum of consumer surplus plus profits from 4500 to 6031.25, an increase of over 33 percent.

Using a two-part tariff will not improve welfare in all cases. For example, if in the absence of the two-part tariff both Type A and Type B consumers had remained in the market, then welfare would be reduced by a two-part tariff even if the two-part tariff results in higher profits for the monopolist. This result follows directly from the fact that in the absence of the two-part tariff, the price per copy equals marginal cost. Because the two-part tariff increases price above marginal cost, welfare would have to be reduced. The major conclusion, therefore, is that a two-part tariff may or may not increase economic welfare.

APPLICATION 15.4
Changing Pricing Strategies at Disneyland and Disney World

When Disneyland opened in Anaheim, California, in 1955, the company used a two-part tariff that included both a fixed fee and a per-ride charge. After paying a fixed-fee admission to enter the park, customers were required to purchase ticket books for the rides. When Disney World opened in Orlando, Florida, in 1971, Disney adopted the same pricing policy for the Magic Kingdom theme park.

By the mid-1970s, Disney decided to change its pricing strategy and began to charge a much higher fixed-fee admission price, but no fee per ride. Disney eliminated the ticket books and replaced them with passports, which entitled the holder to one day of admission that included unlimited rides and attractions. Because the marginal cost to Disney of putting one more customer on a ride is essentially zero, Disney moved from a policy like the one depicted in Figure 15.7, where the price per ride was greater than marginal cost and low-ride- and high-ride-volume consumers were encouraged to enter the parks by a relatively low fixed admission fee, to a policy like the one depicted in Figure 15.6, where the price per ride was set at MC = 0 and the fixed fee was set at a high level that prevented low-ride-volume consumers from entering the theme parks. Disney has maintained this pricing policy for over 25 years now, so it is reasonable to assume that high-ride-volume consumers have a much greater demand for rides than low-ride-volume consumers.

15.2.3 Bundling

Recall that bundling is a tying arrangement in which the goods are purchased in fixed proportions. One famous example of bundling occurred in the motion picture industry during the golden years of major studio domination of the industry. The major motion picture producer-distributors, such as MGM, Paramount, and Fox, bundled high-quality and low-quality pictures together and forced theaters to purchase their entire package of films.

To understand why the system increased the studios' profits, consider the following simple example. Table 15.3 shows the maximum rental per film that two theater chains, Regal Cinemas and AMC, are willing to pay for two Disney films, the popular The Chronicles of Narnia and the unpopular Treasure Planet. Regal Cinemas is willing to pay 800 for The Chronicles of Narnia and 250 for Treasure Planet, while AMC is willing to pay 700 for The Chronicles of Narnia and 300 for Treasure Planet. Regal is willing to
TABLE 15.3 Maximum Rentals for Regal Cinemas and AMC

<table>
<thead>
<tr>
<th>Theater</th>
<th>The Chronicles of Narnia</th>
<th>Treasure Planet</th>
<th>Bundled Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regal Cinemas</td>
<td>800</td>
<td>250</td>
<td>1050</td>
</tr>
<tr>
<td>AMC Theaters</td>
<td>700</td>
<td>300</td>
<td>1000</td>
</tr>
</tbody>
</table>

pay 1050 for both films bundled together, and AMC is willing to pay 1000. If Disney could discriminate perfectly, it would charge each theater the maximum price the theater would be willing to pay for each film; its revenues would be:

\[ TR = 800 + 250 + 700 + 300 = 2050. \]

If Disney must charge the same rental fee for each film to each theater, however, it can either: (a) charge 700 for The Chronicles of Narnia and 250 for Treasure Planet; or (b) bundle the two films together and charge 1000 for both. With option (a) (without bundling), Disney’s revenues equal:

\[ TR = 2(700) + 2(250) = 1900. \]

With option (b) (with bundling), Disney’s revenues equal:

\[ TR = 2(1000) = 2000. \]

In this case, Disney is better off bundling. Bundling is a form of price discrimination because the practice effectively enables Disney to charge a price greater than 700 to Regal for The Chronicles of Narnia and a price greater than 250 to AMC for Treasure Planet. Bundling, therefore, enables Disney to charge different rental rates to different theaters for the same film.

In this case, bundling works to increase profit because there is a difference in the relative valuations of The Chronicles of Narnia and Treasure Planet. Relative valuation refers to how different consumers value different goods in relation to each other. In this case, even though both theaters are willing to pay more for the The Chronicles of Narnia, Regal Cinemas is willing to pay more for the The Chronicles of Narnia than AMC, while AMC is willing to pay more for Treasure Planet than Regal. Therefore, there is a difference in the relative valuations of AMC and Regal for the two movies. In the case of different relative valuations, the demands are said to be negatively correlated, meaning that the consumer willing to pay more for one good is willing to pay less for the other good. If the demands were positively correlated, one consumer would be willing to pay more for both goods and bundling would not increase total revenues.

15.2.4 Mixed Bundling

It is fairly common for firms to give consumers the choice of paying for products separately or bundled together in packages, a practice known as mixed bundling. For example, most restaurants, from McDonald’s to haute cuisine French restaurants, offer an à la carte menu and a bundled fixed price complete meal menu. Similarly, all
professional sports teams offer tickets to individual games and season ticket packages of bundled tickets. Presumably, offering consumers this choice maximizes profits of the restaurant or the sports team.

To understand how the firm decides which method of pricing to use, consider the choices facing a fast-food restaurant such as Burger King. Burger King can offer to sell a Whopper and fries either *only* separately (individual pricing of both items), *only* bundled (the consumer can *only* buy a complete meal), or either separately or bundled (mixed bundling). The following analysis assumes that: (1) Burger King faces a downward-sloping demand curve for Whoppers and for fries; (2) Whoppers and fries are not available for resale; and (3) consumers have different tastes for the two products. The first assumption makes sense if we envision the market for fast food as monopolistically competitive. The second assumption is fairly straightforward: Consumers generally do not buy a Whopper and then offer to resell it to another consumer. We examine the third assumption concerning different tastes in detail in the analysis that follows.

First, consider the individual-pricing-only option, that is, charging separate prices for a Whopper and for fries. Figure 15.8(a) identifies the reservation prices for three different consumers for Whoppers and fries. Consumer X will pay a maximum price of $1.75 for a Whopper and $1.75 for fries. Consumer Y will pay a maximum price of $2.50 for a Whopper and $1.75 for fries. Finally, Consumer Z will pay a maximum price of $3.00 for a Whopper and $0.50 for fries. If Burger King charges $2.00 for a

![Figure 15.8a](https://via.placeholder.com/150)

**FIGURE 15.8a Reservation Prices for Whoppers and Fries for Consumers X, Y, and Z**

Suppose Burger King charges $2.00 for a Whopper and $2.00 for fries. Consumer X has a reservation price of $1.75 for a Whopper and $1.75 for fries and buys neither. Consumer Y has a reservation price of $2.50 for a Whopper and $1.75 for fries and buys only a Whopper. Consumer Z has a reservation price of $3.00 for a Whopper and $0.50 for fries and buys only a Whopper.
Whopper and $2.00 for fries, then Consumer X will purchase nothing (both prices are above Consumer X's respective reservation prices), and Consumers Y and Z will purchase only a Whopper. Note that consumers with reservation prices above $2.00 for each product would buy both a Whopper and fries.

Consider what happens if Burger King bundles its Whopper and fries together by offering only a "value meal combo" of a Whopper and fries for $3.50. Figure 15.8(b) shows that Consumer X is now willing to buy the value meal combo at $3.50, which equals his reservation price of $1.75 for a Whopper plus $1.75 for fries. Furthermore, Consumer Y and Consumer Z also buy the value combo meal for $3.50. By offering only the bundle, Burger King increases its sales from two Whoppers and zero fries to three Whoppers and three fries!

Finally, in Figure 15.8(c), we consider mixed bundling. In this case, Burger King offers either individual pricing at $2.00 each for a Whopper or for fries, or the bundled combo meal at $3.50. Consumers maximize consumer surplus, and therefore, Consumers X and Y purchase the bundle, but Consumer Z buys only a Whopper. In terms of consumer surplus, Consumer X receives zero consumer surplus since the price of the bundle equals his reservation price. Consumer Y receives consumer surplus equal to $0.75, which equals her reservation price of $4.25 for the bundle ($2.50 + $1.75) minus the bundled price of $3.50. This is greater than the $0.50 in consumer surplus she would gain if she bought the Whopper alone for $2.00 (consumer surplus = $2.50 − $2.00). Consumer Z purchases just the Whopper for $2.00 and receives consumer surplus equal to $1.00 ($3.00 − $2.00), which is greater

\[ \text{Value of fries} \]

\[ \begin{array}{c}
\text{3.50} \\
\text{1.75} \\
\text{0.50} \\
\end{array} \]

\[ \begin{array}{c}
\text{Value of a Whopper} \\
\text{1.75} \\
\text{2.50} \\
\text{3.00} \\
\text{3.50} \\
\end{array} \]

\[ \text{Buys the bundle} \]

\[ \text{Buys neither} \]

\[ \text{Z} \]

\[ \text{X} \]

\[ \text{Y} \]

\[ \text{FIGURE 15.8b Effect of a Bundling-Only Policy on Consumers X, Y, and Z} \]

Suppose Burger King bundles a Whopper and fries and charges $3.50 for both. Now Consumers X, Y, and Z buy the bundle because $3.50 is less than or equal to the reservation price for the bundle for all three consumers.
FIGURE 15.8c Effects of Mixed Bundling on Consumers X, Y, and Z

Suppose Burger King gives consumers a choice of either the bundle of a Whopper and fries for $3.50 or single-item pricing, with the price for a Whopper or fries equal to $2.00. Now Consumers X and Y maximize consumer surplus by purchasing the bundle, but Consumer Z buys just a Whopper. Consumers with preferences in the dark red area purchase neither a Whopper nor fries; consumers with preferences in the medium red area purchase both a Whopper and fries; consumers with preferences in the light red area purchase only fries; and consumers with preferences in the gray area purchase only a Whopper.

than the $0.00 in consumer surplus he would receive if he purchased the bundle ($3.50 - $3.50 = $0.00).

Summarizing Figure 15.8(c): Consumers with preferences in the medium red area would buy the bundled combo meal; consumers with preferences in the dark red area would buy nothing; consumers with preferences in the light red area would buy only the fries; and consumers with preferences in the gray area would buy only a Whopper.

We have yet to address the most interesting question for Burger King: Which pricing scheme maximizes profits? To determine profits, it is necessary to know not only what prices different consumers are willing to pay for Whoppers and fries, but also Burger King's costs of production. Suppose we have only three types of consumers, as depicted in Figure 15.9. Type A consumers are willing to pay $0.50 for a Whopper and $3.00 for fries. Type B consumers are willing to pay $2.00 for a Whopper and $1.50 for fries. Finally, Type C consumers are willing to pay $3.00 for a Whopper and $0.50 for fries. Assume the average total cost of producing either a Whopper or an order of fries is $1.00.
Figure 15.9 Comparison of Individual Pricing, Bundling Only, and Mixed Bundling

Suppose the average total cost of producing either a Whopper or fries is $1.00. Type A consumers are willing to pay $0.50 for a Whopper and $3.00 for fries; Type B consumers are willing to pay $2.00 for a Whopper and $1.50 for fries; and Type C consumers are willing to pay $3.00 for a Whopper and $0.50 for fries. Profit maximization with single-item pricing requires charging $2.00 for a Whopper and $3.00 for fries and yields a profit equal to $4. Profit maximization with bundling only requires charging $3.50 for the bundle and yields a profit equal to $4.50. Profit maximization with mixed bundling requires charging $3.50 for the bundle or $2.99 for a Whopper and $2.99 for fries and yields a profit equal to $5.48. Mixed bundling is Burger King’s optimal strategy.

Here are the profit-maximizing pricing strategies under each pricing scheme:

**Individual pricing only**—To maximize profits, Burger King charges $2.00 for a Whopper and $3.00 for fries. Burger King sells two Whoppers (to Consumers B and C) and one order of fries (to Consumer A), and profits equal:

\[ \Pi = TR - TC = (2 \times 2) + (1 \times 3) - (2 \times 1) - (1 \times 1) = 7 - 3 = 4. \]

**Bundling only**—To maximize profits Burger King charges $3.50 for a value meal combo of a Whopper and fries. Burger King sells three combos (to Consumers A, B, and C), and profits equal:

\[ \Pi = TR - TC = 3 \times 3.50 - 3 \times 2 = 10.50 - 6.00 = 4.50. \]

**Mixed bundling**—To maximize profits Burger King charges either $3.50 for a value meal combo, or an individual price of $2.99 for a Whopper and $2.99 for an order of fries. Burger King would sell one combo to Consumer B, one Whopper to Consumer C, and one order of fries to Consumer A, and profits equal:

\[ \Pi = TR - TC = (1 \times 3.50) + 1 \times (2.99) + 1 \times (2.99) - (1 \times 2) - (1 \times 1) - (1 \times 1) \\
= 9.48 - 4.00 = 5.48. \]
In this case, mixed bundling maximizes profits at $5.48 compared to $4.50 with pure bundling and $4.00 with individual pricing. Despite the fact that Burger King sells more Whoppers and fries with a bundling-only policy, profits are higher with mixed bundling. Profits are lower with a bundling-only policy because under that pricing scheme, Burger King is selling some Whoppers and some fries to consumers who have reservation prices below Burger King’s costs of production. Consumer A, for example, values the Whopper at only $0.50, which is below Burger King’s cost of $1.00. Similarly, Consumer C values the fries at $0.50, which is below Burger King’s cost of $1.00. With a bundling-only policy, Burger King earns $1.50 on its sales to Consumers A and C, but with mixed bundling, Burger King earns $1.99 on its sale of fries to Consumer A, and another $1.99 on its sale of a Whopper to Consumer C. Mixed bundling enables Burger King to capture more of the available consumer surplus, and therefore, results in increased profits.

Given the demands in Figure 15.9, if production costs equaled zero, Burger King would be better off with a bundling-only policy. With zero costs of production, Burger King would simply wish to maximize total revenues at $10.50 by using a bundling-only policy. Depending on consumer tastes and the costs of production, any of the various pricing schemes could maximize profits. Because all of the major fast-food chains have adopted a mixed bundling strategy, it is reasonable to conclude that in the fast-food industry a mixed bundling policy maximizes profits.

### 15.2.5 Requirements Tie-in Sales

Recall that requirements tie-in sales consist of a tying agreement in which the goods are purchased in variable proportions. In a typical requirements tie-in a firm with market power over good X requires its buyers to purchase all of their requirements of a complementary good, good Y, in order to obtain good X. In one famous example, American Can and Continental Can both adopted a policy of leasing their patented can-closing machines for a minimum of five years with the further restriction that the lessee purchase all of its can requirements during the five-year period from its machinery supplier. Under no circumstances were machines offered for sale. These policies enabled the major can companies to increase their profits by practicing a form of price discrimination in the machinery market. Market power was the result of superior machines, not superior cans, yet the companies leased their machines at rentals below average cost. This was possible because can prices were kept substantially above average cost. The cans were used as a method of metering machine use. The more cans a firm used, the larger were the profits it paid to its can supplier. A purchaser of 1 million cans paid 10 times more for the use of closing machinery than the user of 100,000 cans.

The requirements tie-in used in the can industry had several possible anticompetitive effects. Because American and Continental controlled the machinery market, it was extremely difficult for independent can manufacturers to find a market; the requirements tie-in foreclosed most of the market for cans. Foreclosure occurs when upstream firms have difficulty obtaining inputs or when downstream firms have difficulty finding buyers. In this case, because independent can manufacturers could not

*Examples include Alcoa’s control of bauxite ore, foreclosing competitors from the raw material needed to produce virgin aluminum and American automobile producers being foreclosed from Japanese automobile dealers that are controlled by the major Japanese automobile manufacturers.*
find buyers, the only way to enter the can market was to produce both cans and can-closing machinery. Forcing firms to enter two markets instead of one increased the capital barrier to entry. More important, large R&D expenditures were required to produce non-patent-infringing can-closing machinery capable of competing with American's and Continental's equipment. This proved to be an almost impossible barrier, and American and Continental were able to control both markets.

Requirements tie-in sales have been used in an attempt to extend market power in many industries. Before computers were invented, IBM tied cards to its tabulating machinery. United Shoe Machinery tied shoe machinery supplies, such as nails and tacks, to its shoe machinery. And many franchisors, such as McDonald's, tie several products, such as hamburger patties and buns, to their franchises. Kodak used to tie film processing to its film, and as recently as 1992 the Supreme Court ruled that Kodak had illegally tied its repair parts and maintenance service to its micrographic equipment* and high-volume copiers. Because requirements tie-ins can have anticompetitive effects, they have been the focus of a good deal of antitrust attention; we consider this further in Chapter 16.

15.3 Distribution Effects of Price Discrimination

The distribution effects of price discrimination are straightforward—producers as a group gain and consumers as a group lose. In fact, the producer's incentive to discriminate is a desire to increase profits. First-degree discrimination carries this to an extreme: All of the consumer surplus is transferred to producers.

Is this redistribution of income good or bad? The answer depends entirely on value judgments. Because price discrimination always increases profits, and because much of it is done by large corporations with market power, many believe that this redistribution is bad for society. If price discrimination generally redistributes income from consumers at large to stockholders and managers, it will generate some increase in the degree of inequality in society.

One often-cited example, however, suggests that redistributional effects may have net social benefits. Physicians are among the largest beneficiaries of price discrimination. Doctors routinely discriminate between high- and low-income patients or those with and without good insurance. Discrimination helps explain why doctors have such high incomes. Yet consider the case of a doctor in a small rural community facing the demand and cost situation depicted in Figure 15.10. Because the AC curve is always above the demand curve, no single fee would enable the physician to cover her costs. If she uses second-degree discrimination and charges a group of high-income patients $F_H$, a group of middle-income patients $F_M$, and her low-income patients $F_L$, then she will see a total of $Q_H$ patients and her average cost per patient will be $C_{AVG}$. The doctor will earn an excess profit of the light gray area $F_H AC_{AVG}$ from her high-income patients and an excess profit of the red area BCED from her middle-income patients. These excess profits will offset her loss of the dark gray area $EFGH$ from low-income patients. Only by discriminating is the doctor able to remain in the community. In this case many would argue that the redistributive impact of price discrimination is socially positive.

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*Micrographic equipment is used to create, file, retrieve, view, and print microfiche and microfilm.