Chapter 16 Lecture - Pricing Strategy

Price, or Prices?

Until now, we have assumed that firms charge a single price for their products.

- Is this model good enough?

We will ask:

- When is it possible for a firm to charge different prices for the same product?
- Why would a firm want to charge different prices?
- Would such a practice increase or decrease efficiency?
- What other pricing strategies make sense for firms to use?

Pricing Strategy, the Law of One Price, and Arbitrage

We define the law of one price and explain the role of arbitrage.

Suppose that two identical products sold for different prices.

- *Example: An Apple iPad might sell for $499 in stores in Atlanta and for $429 in stores in San Francisco.*
- What do you think would happen?

An entrepreneur would start buying iPads in San Francisco, shipping them to Atlanta, and selling them for $499 (or a little less).

- This practice of buying a product in one market and reselling it in a market with a higher price is known as *arbitrage*.

Arbitrage and the Law of One Price

If this arbitrage can occur, what will happen to prices in Atlanta (where the price is currently $499) and San Francisco (where the price is currently $429)?

- The supply of iPads in Atlanta will rise, decreasing the price in Atlanta.
- The supply of iPads in San Francisco will fall, increasing the price in San Francisco.

If it were completely free to transport iPads from San Francisco to Atlanta, the price would converge to being exactly the same in each location; this is the "*law of one price*".

The Law of One Price and Transaction Costs

There are transaction costs for transporting the iPads from San Francisco to Atlanta.

Transaction costs: The costs in time and other resources that parties incur in the process of agreeing to and carrying out an exchange of goods or services.

We only expect the law of one price to hold perfectly when transaction costs are zero.

- Can only apply if resale is possible.
- *Example: Reselling haircuts; so the law of one price will not apply to haircuts.*

Table 16.1 Which Internet Retailer Would You Buy From? (1 of 2)

Sometimes firms appear to be selling the same product at different prices, violating the rule of one price.

- *Example: The same blu-ray disc may sell for different prices on different web sites.*
- But is the same movie on different web sites really the same product? Consider the table below:

Product: *The Avengers: Age of Ultron* Blu-ray Disc

Company	Price	What does this site offer you?
Amazon.com	$24.99	• Fast delivery to your home. • Secure packaging. • Easy payment to your credit card using a secure method that keeps your credit card number safe from computer hackers.
walmart.com	24.98	• Fast delivery to your home. • Secure packaging. • Easy payment to your credit card using a secure method that keeps your credit card number safe from computer hackers.
WaitForeverForYourOrder.com	22.50	Low price
JustStartedinBusinessLastWednesday.com	21.25	Low price

Table 16.1 Which Internet Retailer Would You Buy From? (2 of 2)

Some people might be willing to take a risk on the last site, in order to save a couple of dollars.

But many would buy from Amazon.com or Walmart.com instead; here the "product" might refer not only to the physical disc, but trusting the company to deliver it on time, not to resell your credit card information, etc.

Product: *The Avengers: Age of Ultron* Blu-ray Disc

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walmart.com	24.98	• Fast delivery to your home. • Secure packaging. • Easy payment to your credit card using a secure method that keeps your credit card number safe from computer hackers.
WaitForeverForYourOrder.com	22.50	Low price
JustStartedinBusinessLastWednesday.com	21.25	Low price

Price Discrimination: Charging Different Prices for the Same Product

We explain how a firm can increase its profits through price discrimination.

Suppose you go with your family to see a movie:

- As a student, you will probably get a "student discount."
- Your grandparents might get a "senior discount."
- Your parents will probably have to pay full price.

The movie theater will charge these different prices, even though it costs them the exact same amount to show the movie to each one of you.

- This is an example of **price discrimination**: charging different prices to different customers for the same product when the price differences are not due to differences in cost.

Discrimination? Isn't That Illegal?

Discrimination on the basis of arbitrary characteristic, such as race or gender, is certainly illegal.

- Price discrimination is performed, however, on the basis of willingness and ability to pay and as such is generally legal.
- *Example: Students and the elderly tend to be poorer than adults of working age, so their willingness to pay for a movie ticket tends to be lower.*

There are some gray areas. Car insurance companies typically charge lower prices to women than to men, because men have more accidents than women.

- But what if a car company determined that one race tended to have more accidents than another?

When Is Price Discrimination Possible?

Price discrimination is possible when:

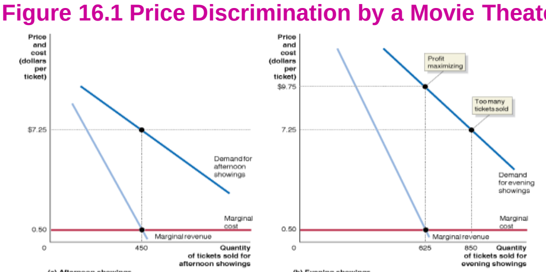
1. Firms possess market power
   - Otherwise, the firm is a price-taker.
2. Identifiable groups of consumers have different willingness to pay for the product
   - If the firm cannot identify different groups, it cannot expect to charge those groups different prices.
3. Arbitrage of the product is not possible
   - Either because reselling the product is not logically possible (an education, for example) or because the transaction costs involved make resale impractical.

Groups of Consumers with Different Willingness to Pay

If firms can practice price discrimination, who will they charge a higher price to?

1. Groups with a *higher demand*
   - These people are willing to pay more, and firms will profit by charging them more.
2. Groups with a *lower price elasticity of demand*
   - These people are less sensitive to price; raising the price on them will result in fewer of them ceasing to use the product.

Figure 16.1 Price Discrimination by a Movie Theater



Demand for movies is higher in the evening than the afternoon.

- In the afternoon, the profit-maximizing price for a ticket to an afternoon showing is $7.25, using *MC* = *MR*.
- When demand is higher in the evening, the profit-maximizing price is higher.

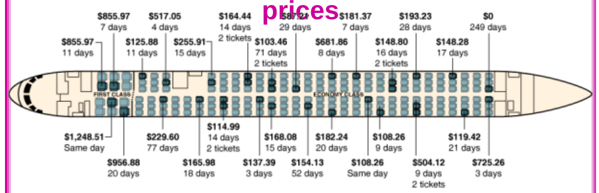
Yield Management

Yield management is the practice of continually adjusting prices to take into account fluctuations in demand in order to maximize profit.

Example: Airlines adjust prices of flights depending on how full the flight is, and what they anticipate demand for the flight will be before departure.

Yield management is a sophisticated form of price discrimination that relies on gathering and understanding data about your customers and their behavior.

Figure 16.2 33 customers and 27 different prices



The figure illustrates price discrimination on a United Airlines flight from Chicago to Los Angeles.

- Notice that people who bought tickets more than 14 days in advance generally paid lower prices.
- But there are some exceptions, suggesting yield management by the airline.

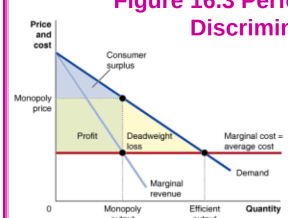
Perfect Price Discrimination

Perfect or *first-degree price discrimination* refers to charging every consumer a price exactly equal to their willingness to pay for a product.

- In this case, every consumer would buy the product, but consumer surplus would be zero: the firm would extract all surplus from the market.

Perfect price discrimination is probably impossible in practice; but it can illustrate a surprising result: price discrimination might *increase* economic efficiency.

Figure 16.3 Perfect (1st Degree)Price Discrimination (1 of 2)

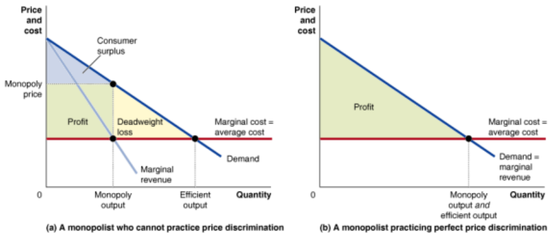


(a) A monopolist who cannot practice price discrimination

In this panel, the monopolist cannot price discriminate.

- As usual, the monopolist chooses the quantity where $MC=MR$.
- Many consumers who are willing to pay more than MC miss out; this is a deadweight loss.

Figure 16.3 Perfect Price Discrimination (2 of 2)



Now we allow the monopolist to perfectly price discriminate.

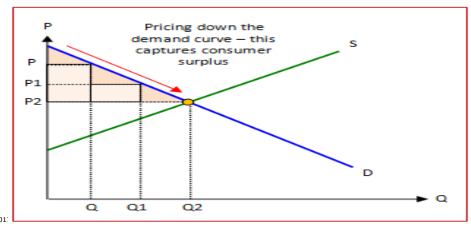
- It sells to every consumer with a willingness to pay greater than the marginal cost; this maximizes profit.
- Then the monopolist will sell the efficient quantity!

2nd Degree Price Discrimination

Different price is charged for a different quantity bought (but not across consumers).

set one price for a 1st bundle, a lower price for a 2nd bundle, ...

extract some, but not all of consumer surplus



3rd Degree Price Discrimination

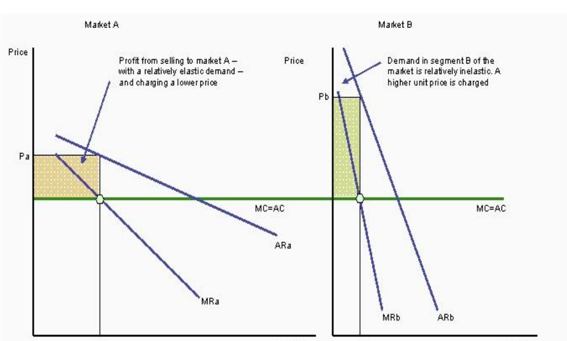


Figure 16.4 Price Discrimination across Time

A less obvious way in which firms price discriminate is *across time*.

For example, book publishers often sell a hardcover version, and some months later, release a much cheaper, paperback version.

The production cost is similar. The publisher simply wants to determine who is a huge fan and *can't wait* to read the book, and hence is *willing to pay more*; these people will get charged more.

Two-Part Tariffs

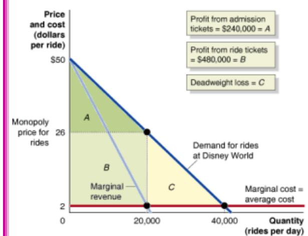
Another pricing strategy that a firm can use is a **two-part tariff**: making consumers pay one price (or *tariff*) for the right to buy as much of a related good as they want at a second price.

- Memberships, at Sam's Club, your local tennis club, or the local video store, often work this way.
- Phone companies also use this approach, with a monthly charge plus a fee for additional minutes.

Why would companies use such a pricing strategy?

- We will investigate by considering Disney World's pricing structure for rides.

Figure 16.5 A Two-Part Tariff at Disney World (1 of 2)



(a) Disney's profit when charging the monopoly price

Suppose Disney World has just one ride, with demand as shown.

- The marginal cost of a ride is very small: $2.
- If Disney charges the monopoly price, it sells 20,000 rides, making profit B.

Assuming Disney can identify its customers' willingness to pay for tickets, it also makes profit from selling admission tickets: area A.

- Area C is deadweight loss.

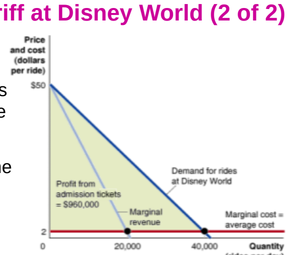
Figure 16.5 A Two-Part Tariff at Disney World (2 of 2)

If Disney instead charged admission equal to the willingness to pay for each rider, it obtains the whole surplus as its profit.

Everyone willing to pay at least the marginal cost of a ride gets to go to the park: economic efficiency.

This argument relies on Disney's ability to price discriminate among park entrants.

- The vast number of pricing options Disney provides suggests that this is indeed how Disney tries to make its profit.



(b) Disney's profit when charging the perfectly competitive price

Table 16.2 Disney's Profits per Day from Different Pricing Strategies

	Monopoly Price for Rides	Competitive Price for Rides
Profits from admission tickets	$240,000	$960,000
Profits from ride tickets	480,000	0
Total profit	720,000	960,000

By charging a low price for rides, our hypothetical Disney park makes more money than charging a high price, since it recoups the money in admission tickets.

- In practice, Disney does not even charge the marginal cost for its rides, since it is so small that it is not worth collecting.

Disney's actual profits are smaller than what this would suggest, because it cannot perfectly price discriminate.