PRINCIPLES OF ECONOMICS - CHAPTER 8 NOTES

I. **Learning Objectives.** After reading this chapter, students should be able to:

A. List the characteristics of pure monopoly and discuss several barriers to entry that relate to monopoly. (LO 8-1)

B. Explain how a pure monopoly sets its profit-maximizing output and price. (LO 8-2)

C. Discuss the economic effects of monopoly. (LO 8-3)

D. Describe why a monopolist might prefer to charge different prices in different markets. (LO 8-4)

E. Identify the antitrust laws that are used to deal with monopoly. (LO 8-5)

II. **An Introduction to Pure Monopoly**

A. Definition: Pure monopoly exists when a single firm is the sole producer of a product for which there are no close substitutes.

B. There are several characteristics that distinguish pure monopoly.

1. There is a single seller so the firm and industry are synonymous.
2. There are no close substitutes for the firm's product.
3. The firm is a "price maker," that is, the firm has considerable control over the price because it can control the quantity supplied.
4. Entry into the industry by other firms is blocked.

C. There are a number of products where the producers have a substantial amount of monopoly power and are called "near" monopolies.

D. Examples of pure monopolies and "near monopolies":

1. Public utilities—gas, electric, water, cable TV, and local telephone service companies—are pure monopolies.
2. First Data Resources (Western Union), Wham-o (Frisbees), and the DeBeers diamond syndicate are examples of "near" monopolies.
3. Manufacturing monopolies are virtually nonexistent in nationwide U.S. manufacturing industries.
4. Professional sports leagues grant team monopolies to cities.
5. Monopolies may be geographic. A small town may have only one airline, bank, etc.

III. **Barriers to Entry Limiting Competition**

A. Economies of scale constitute one major barrier. This occurs where the lowest unit costs and, therefore, lowest unit prices for consumers depend on the existence of a small number of large firms or, in the case of a pure monopoly, only one firm. Because a very large firm with a large market share is most efficient, new firms cannot afford to start up in industries with extensive economies of scale. In extreme cases, this can give rise to a natural monopoly.

B. Legal barriers to entry into a monopolistic industry also exist in the form of patents and licenses.

1. Patents grant the inventor the exclusive right to produce or license a product for twenty years; this exclusive right can earn profits for future research, which results in more patents and monopoly profits.

2. Licenses are another form of entry barrier. Radio and TV stations and taxi companies are examples of government granting licenses where only one or a few firms are allowed to offer the service.

C. Ownership or control of essential resources is another barrier to entry.

1. International Nickel Co. of Canada (now called Inco) controlled about 90 percent of the world's nickel reserves, and DeBeers of South Africa controls most of the world's diamond supplies.

2. Professional sports leagues control player contracts and leases on major city stadiums.

D. Monopolists may use pricing or other strategic barriers such as selective price-cutting and advertising.

1. Dentsply, manufacturer of false teeth, controlled about 70 percent of the market. In 1999 the U.S. Justice Department accused Dentsply of illegally preventing distributors from carrying competing brands.
2. Microsoft charged higher prices for its Windows operating system to computer manufacturers featuring Netscape Navigator instead of Microsoft's Internet Explorer. U.S. courts ruled this action illegal.

IV. Monopoly demand is the industry (market) demand and is therefore downward sloping.

A. Our analysis of monopoly demand makes three assumptions:

1. The monopoly is secured by patents, economies of scale, or resource ownership.

2. The firm is not regulated by any unit of government.

3. The firm is a single-price monopolist; it charges the same price for all units of output.

B. Price will exceed marginal revenue because the monopolist must lower the price to sell the additional unit. The added revenue will be the price of the last unit less the sum of the price cuts that must be taken on all prior units of output (Figure 8.1).

1. Figure 8.1 shows the relationship between demand and marginal-revenue curves.

2. The marginal-revenue curve is below the demand curve, and when it becomes negative, total revenue falls [which is why the monopolist will not expand output into the inelastic portion of its demand curve].

C. The monopolist is a price maker. The firm controls output and price but is not free of market forces, since the combination of output and price that can be sold depends on demand. For example, Figure 8.1 shows that at $162 only 1 unit will be sold; at $152 only 2 units will be sold; etc.

V. Output and Price Determination

A. Cost data are based on hiring resources in competitive markets, so the cost data of Chapters 6 and 7 can be used in this chapter as well. The costs in Figure 8.2 restate the data of Figure 6.3.

B. The MR = MC rule will tell the monopolist where to find its profit-maximizing output level. This can be seen in Figure 8.2. The same outcome can be determined by comparing total revenue and total costs incurred at each level of production.

C. There are several misconceptions about monopoly prices.

   1. A monopolist cannot charge the highest price it can get because it will maximize profits where total revenue minus total cost is greatest. This depends on quantity sold as well as on price and will never be the highest price possible.

   2. Total, not unit, profits are the goal of the monopolist. Figure 8.2 has an example of this, in which unit profits are $32 at 4 units of output compared with $28 at the profit-maximizing output of 5 units. Once again, quantity must be considered as well as unit profit.

   3. Losses can occur in a pure monopoly in the short run (P > AVC); the less-than-profitable monopolist will shut down in the long run (P < ATC).

VI. Evaluation of the Economic Effects of a Monopoly

A. Price, output, and efficiency of resource allocation should be considered.

   1. Monopolies will sell a smaller output and charge a higher price than would competitive producers selling in the same market, i.e., assuming similar costs.

   2. Monopoly price will exceed marginal cost because it exceeds marginal revenue and the monopolist produces where marginal revenue and marginal cost are equal. The monopolist charges the price that consumers will pay for that output level.

   3. Allocative efficiency is not achieved because price (what product is worth to consumers) is above marginal cost (opportunity cost of product). Ideally, output should expand to a level where price = marginal revenue = marginal cost, but this will occur only under pure competitive conditions where price = marginal revenue. (See Figure 8.3.)

   4. Productive efficiency is not achieved because the monopolist's output is less than the output at which average total cost is at its minimum.

B. Income distribution is more unequal than it would be under a more competitive situation. The effect of the monopoly power is to transfer income from the consumers to the business owners. This will result in a redistribution of income in favor of higher-income business owners, unless the buyers of monopoly products are wealthier than the monopoly owners. What the consumer loses, the monopolist gains. The efficiency loss is a deadweight loss because society completely loses the net benefits associated with the units that are not produced.

C. Cost complications may lead to other conclusions.

   1. Economies of scale may result in one or two firms operating in an industry experiencing lower ATC than many competitive firms. These economies of scale may be the result of spreading large initial capital cost over a large number of units of output (natural monopoly) or, more recently, spreading product development costs over units of output, and a greater specialization of inputs.

      a. Simultaneous consumption—a product's ability to satisfy a large number of consumers at the same time—promotes economies of scale.

      b. Network effects—increases in the value of a product to each user as the number of users increases—also fosters economies of scale.

   2. X-inefficiency may occur in monopoly since there is no competitive pressure to produce at the minimum possible costs.

3. Rent-seeking behavior often occurs as monopolies seek to acquire or maintain government-granted monopoly privileges. Such rent-seeking may entail substantial costs (lobbying, legal fees, public relations advertising, etc.), which are inefficient.
4. Technological progress and dynamic efficiency may occur in some monopolistic industries but not in others. The evidence is mixed.
   a. Some monopolies have shown little interest in technological progress.
   b. On the other hand, research can lead to lower unit costs, which help monopolies as much as any other type of firm. Also, research can help the monopoly maintain its barriers to entry against new firms.
   c. Major technological breakthroughs can displace existing monopolies through creative destruction (Chapter 2).

D. **Applying the Analysis: Is De Beers' Diamonds Monopoly Forever?**

1. De Beers Consolidated Mines of South Africa has been one of the world's strongest and most enduring monopolies. It produces about 45 percent of all rough-cut diamonds in the world and buys for resale many of the diamonds produced elsewhere. In the mid-1980s their share of the market was about 80 percent; today it is down to 55 percent.
2. Its behavior and results fit the monopoly model portrayed in Figure 8.2. It sells a limited quantity of diamonds that will yield an "appropriate" monopoly price.
3. The "appropriate" price is well over production costs and has earned substantial economic profits.
4. How has De Beers controlled the production of mines it doesn't own?
   a. It convinces producers that "single-channel" monopoly marketing is in their best interests.
   b. Mines that don't use De Beers may find the market flooded from De Beers' stockpiles of the particular kind of diamond they produce, which causes price declines and loss of profits.
   c. Finally, De Beers purchases and stockpiles diamonds produced by independents.
5. Many developments have undermined De Beers' monopoly power.
   a. New diamond discoveries have resulted in more diamonds outside their control.
   b. Russia, which has been a part of De Beers' monopoly, has been allowed to sell a part of its stock directly into the world market.
6. In mid-2000, De Beers abandoned its attempt to control the supply of diamonds.
7. The company is transforming itself into a company that sells "premium" diamonds and luxury goods under the De Beers label.
8. De Beers plans to reduce its stockpile of diamonds and increase the demand for diamonds through advertising and selling "premium" diamonds.

VII. Price discrimination occurs when a given product is sold at more than one price and the price differences are not based on cost differences.

A. Conditions needed for successful price discrimination:

1. Monopoly power is needed with the ability to control output and price.

2. The firm must have the ability to segregate the market, to divide buyers into separate classes that have a different willingness or ability to pay for the product (usually based on differing elasticities of demand).

3. Buyers must be unable to resell the original product or service.

B. Examples of price discrimination:

1. Airlines charge high fares to executive travelers (inelastic demand) than vacation travelers (elastic demand).

2. Electric utilities frequently segment their markets by end uses, such as lighting and heating. (Lack of substitutes for lighting makes this demand inelastic).

3. Movie theaters and golf courses vary their charges on the basis of time and age.

4. Discount coupons are a form of price discrimination, allowing firms to offer a discount to price-sensitive customers.

5. International trade has examples of firms selling at different prices to customers in different countries.

C. Graphical Analysis (Figure 8.4)

1. A firm identifies and can segregate a market into two types of customers, students and small businesses.

   a. Students are more price sensitive (more elastic demand).

   b. Small businesses have less elastic demand for the product.

2. Both demand curves are downsloping, meaning that they also both have marginal revenue curves that lay below them.

3. The firm will choose the output for each segment of the market based on where MR = MC, and then go up to the two demand curves to find the prices required to sell those quantities.

4. More profits can be earned by the seller and more output will be enjoyed by consumers; those willing to pay more (businesses) can be charged more without driving off student customers. Likewise, student customers can be charged less without having to extend those price breaks to businesses.

D. **Applying the Analysis: Price Discrimination at the Ballpark**

1. Professional baseball teams offer lower ticket prices to children (more elastic demand) than to adults (more inelastic demand). This price discrimination works because it satisfies all three requirements.

2. Price discrimination does *not* occur in the selling of concessions. If it did, adults would simply send children to buy concessions for them. This would violate the “no resale” requirement for successful price discrimination.

VIII. Monopoly and Antitrust Policy

A. Monopolies are a concern because of the higher prices, underallocation of resources, redistribution of income, rent-seeking behavior, X-inefficiency, and other problems that can result.

B. However, monopolies are not widespread and they can be destroyed through technological advances, nor is there any guarantee that having monopoly power will result in its abuse.

C. **Global Snapshot 8.1: Competition from Foreign Multinational Corporations**

D. Over the years a series of laws and court cases have formed U.S. antitrust policy.

1. The Sherman Act was passed in 1890. It contains two main provisions.
   a. Contracts or combinations in restraint of trade or commerce among the several states or with foreign nations is illegal (Section 1).
   b. Every person who shall monopolize or attempt to monopolize any part of the trade or commerce among the states or with foreign nations shall be deemed guilty of a felony (Section 2).
2. In 1911 the Supreme Court found Standard Oil guilty of monopolizing the petroleum industry through abusive and anticompetitive actions. It however left open the question of whether every monopoly violated Section 2 of the Sherman Act.
3. The 1920 Supreme Court decision on the U.S. Steel case led to the application of the "rule of reason." The Court decided that not every monopoly is illegal if the firm(s) involved did not gain that power unreasonably.

E. Antitrust suits can be filed under the Sherman Act by the U.S. Department of Justice, the Federal Trade Commission, injured private parties, or state attorney generals.

F. Successfully prosecuted antitrust cases may result in the following:

1. Behavioral remedies—injunctions to stop the anticompetitive practices.
2. Structural remedies—breaking up the monopoly into competing firms.
3. Monetary damages—by law injured parties are eligible for *treble damages*, three times the amount of the monetary injury.

G. **Applying the Analysis: United States v. Microsoft**

1. In May 1998, the U.S. Justice Department, 19 individual states, and the District of Columbia (the government) filed antitrust charges against Microsoft under the Sherman Antitrust Act.
2. The government charged that Microsoft had violated Section 2 of the act by taking a series of actions that were designed to maintain its "Windows" monopoly.
3. Microsoft denied the charges, arguing that it had achieved success through product innovation and lawful business practices. It also pointed out that monopoly was transitory because of rapid technological advances.
4. In June 2000, the district court ruled that Microsoft's share of the software used to operate Intel-compatible personal computers was 95 percent of the market, which clearly gave Microsoft monopoly power.
5. Although being a monopoly is not illegal, the court stated that Microsoft had violated the Sherman Act by using anticompetitive means to maintain and broaden its monopoly power. These actions were taken against Netscape's Navigator and Sun's Java programming language. The court ruled that Microsoft had illegally tied the Microsoft browser, Internet Explorer, to Windows and provided Internet Explorer at no charge.
6. The court concluded that Microsoft had mounted an attack on competitors and had used actions that trammeled the competitive process through which innovation occurs.
7. The court ordered Microsoft to be split into two companies. These companies were prohibited from entering into joint ventures with one another.
8. In late 2000, Microsoft filed an appeal with a U.S. court of appeals. In 2001 the court ruled that Microsoft had illegally maintained its monopoly but reversed the decision to break up Microsoft.
9. In the final settlement a number of behavioral remedies were enacted:

a. Microsoft is prevented from retaliating against any firm that competes with Microsoft by developing, selling, or using software that competes with Microsoft Windows or Internet Explorer.

b. Microsoft is required to establish uniform royalties and licensing terms for any computer manufacturer wanting to include Windows on their personal computers.

c. Microsoft must allow manufacturers to remove Microsoft icons and replace them with others on the Windows desktop.

d. Microsoft must provide technical information so that other companies can develop software that is compatible with Windows and other Microsoft products.