Chapter 15: Monopoly

• While a competitive firm is a *price taker*, a monopoly firm is a *price maker*.
• A firm is considered a *monopoly* if . . .
  – it is the sole seller of its product.
  – its product does not have close substitutes.
• The fundamental cause of monopoly is *barriers to entry*, essentially other firms cannot enter the market.

WHY MONOPOLIES ARISE

• Barriers to entry have three sources:
  – A single firms owns a key resource (i.e., DeBeers Diamond Monopoly).
  – The government gives a single firm the exclusive right to produce some good (i.e., Network Solutions).
  – Costs of production make a single producer more efficient than a large number of producers, basically a natural monopoly (i.e., Cable TV).
  • A natural monopoly arises when there are economies of scale over the relevant range of output.

HOW MONOPOLIES MAKE PRODUCTION AND PRICING DECISIONS

• Monopoly versus Competition
  – Monopoly
    • Is the sole producer
    • Faces a downward-sloping demand curve (selling of additional units, prices must be reduced)
    • Is a price maker
    • Reduces price to increase sales
  – Competitive Firm
    • Is one of many producers
    • Faces a horizontal demand curve (can’t change prices)
    • Is a price taker
    • Sells as much or as little at same price
Figure 2 Demand Curves for Competitive and Monopoly Firms

Since a monopoly is the sole producer in its market, it faces the market demand curve.

Table 1 A Monopoly's Total, Average, and Marginal Revenue

<table>
<thead>
<tr>
<th>Quantity of Water (Q)</th>
<th>Price (P)</th>
<th>Total Revenue (TR = P × Q)</th>
<th>Average Revenue (AR = TR/Q)</th>
<th>Marginal Revenue (MR = dTR/dQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$11</td>
<td>$0</td>
<td>—</td>
<td>$10</td>
</tr>
<tr>
<td>1</td>
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<td>$10</td>
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<td>18</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>24</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>28</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>30</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
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<td>-4</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>24</td>
<td>3</td>
<td></td>
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</tbody>
</table>

A Monopoly's Revenue

- A Monopoly’s Marginal Revenue
  - A monopolist’s marginal revenue is always less than the price of its good.
    - The demand curve is downward sloping.
    - When a monopoly drops the price to sell one more unit, the revenue received from previously sold units also decreases.
  - When a monopoly increases the amount it sells, it has two effects on total revenue ($P \times Q$).
    - The output effect—more output is sold, so $Q$ is higher.
    - The price effect—price falls, so $P$ is lower.
Profit Maximization

- A monopoly maximizes profit by producing the quantity at which marginal revenue equals marginal cost.
- It then uses the demand curve to find the price that will induce consumers to buy that quantity.

Profit Maximization

- Comparing Monopoly and Competition
  - For a competitive firm, price equals marginal cost.
    - \( P = MR = MC \)
  - For a monopoly firm, price exceeds marginal cost.
    - \( P > MR = MC \)
  - Remember, all profit-maximizing firms set \( MR = MC \).

A Monopoly’s Profit

- Profit equals total revenue minus total costs.
  - Profit = \( TR - TC \)
  - Profit = \( (TR/Q - TC/Q) \times Q \)
  - Profit = \( (P - ATC) \times Q \)
Figure 5 The Monopolist’s Profit: Price Must Be Greater Than Average Total Cost.

Profit = (P – ATC) × Q

Monopoly profit
Average total cost
Quantity
Marginal cost
Marginal revenue

Figure 6 The Market for Drugs

Costs and Revenue
Marginal cost
Demand
Marginal revenue
Price during patent life
Price after patent expires

Shifting from Monopoly to Competitive

• Market for Drugs
  – Initially, a firm receives a patent law, which gives a firm a monopoly on the sale of that drug.
  – Eventually, the firm’s patent runs out, and any company can make and sell that drug.
  – As a result, the market switches from being monopolist to being competitive.

THE WELFARE COST OF MONOPOLY

• Is monopoly a good way to organize a market?
• In contrast to a competitive firm, the monopoly charges a price above the marginal cost.
• From the standpoint of consumers, this high price makes monopoly undesirable.
• However, from the standpoint of the owners of the firm, the high price makes monopoly very desirable.
The Deadweight Loss

- Because a monopoly sets its price above marginal cost, it places a wedge between the consumer’s willingness to pay and the producer’s cost.
  - This wedge causes the quantity sold to fall short of the social optimum.
- The Inefficiency of Monopoly
  - The monopolist produces less than the socially efficient quantity of output.

The Monopoly’s Profit: A Social Cost?

- The deadweight loss caused by a monopoly is similar to the deadweight loss caused by a tax.
- The difference between the two cases is that the government gets the revenue from a tax, whereas a private firm gets the monopoly profit.

PUBLIC POLICY TOWARD MONOPOLIES

- Government responds to the problem of monopoly in one of four ways.
  - Making monopolized industries more competitive (Antitrust Laws).
  - Regulating the behavior of monopolies (Government regulates prices, i.e., water).
  - Turning some private monopolies into public enterprises (Postal Services).
  - Doing nothing at all (Imperfections of political failures much greater than economic failures).
Increasing Competition with Antitrust Laws

- Antitrust laws are a collection of statutes aimed at curbing monopoly power.
- Antitrust laws give government various ways to promote competition.
  - They allow government to prevent mergers.
  - They allow government to break up companies.
  - They prevent companies from performing activities that make markets less competitive.

Regulation

- In practice, regulators will allow monopolists to keep some of the benefits from lower costs in the form of higher profit, a practice that requires some departure from marginal-cost pricing.

PRICE DISCRIMINATION

- Price discrimination is the business practice of selling the same good at different prices to different customers, even though the costs for producing for the two customers are the same.
- Price discrimination not possible when a good is sold in a competitive market. Why?
- In order to price discriminate, the firm must have some market power.

The Analytics of Price Discrimination

- Perfect Price Discrimination
  - Perfect price discrimination refers to the situation when the monopolist knows exactly the willingness to pay of each customer and can charge each customer a different price.
- Two important effects of price discrimination:
  - It can increase the monopolist’s profits.
  - It can reduce deadweight loss.
Figure 10 Welfare with and without Price Discrimination

(a) Monopolist with Single Price

- Consumer surplus
- Deadweight loss
- Marginal revenue
- Marginal cost
- Profit
- Quantity sold

(b) Monopolist with Perfect Price Discrimination

- Every consumer gets charged a different price – the highest price they are willing to pay – so in this special case, the demand curve is also MR!

Examples of Price Discrimination

- Movie tickets
- Airline prices
- Discount coupons
- Financial aid
- Quantity discounts

Table 2 Competition versus Monopoly: A Summary Comparison

<table>
<thead>
<tr>
<th></th>
<th>Competition</th>
<th>Monopoly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Similarities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal of firms</td>
<td>Maximize profit</td>
<td>Maximize profit</td>
</tr>
<tr>
<td>Rule for maximizing</td>
<td>MR = MC</td>
<td>MR = MC</td>
</tr>
<tr>
<td>Can earn economic profits in the short run?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Differences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of firms</td>
<td>Many</td>
<td>One</td>
</tr>
<tr>
<td>Marginal revenue</td>
<td>MR = P</td>
<td>MR &lt; P</td>
</tr>
<tr>
<td>Price</td>
<td>P = MC</td>
<td>P &gt; MC</td>
</tr>
<tr>
<td>Produces welfare-maximizing level of output?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Entry in long run?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Can earn economic profits in long run?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Price discrimination possible?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>