Monopoly Profit Maximization

Chapter 11-3

A Model of Monopoly

- How much should the monopolistic firm choose to produce if it wants to maximize profit?

The Monopolist’s Price and Output Numerically

- The first thing to remember is that marginal revenue is the change in total revenue that occurs as a firm changes its output.

\[ TR = P \times Q \]

\[ MR = \frac{\text{Change in Total Revenue}}{\text{change in output}} \]

Another way to say it is: “how much does your Total Revenue change as you increase output”

The Monopolist’s Price and Output Numerically

- When a monopolist increases output, it lowers the price on all previous units.
- As a result, a monopolist’s marginal revenue is always below its price.

The Monopolist’s Price and Output Numerically

- In order to maximize profit, a monopolist produces the output level at which marginal cost equals marginal revenue.
- Producing at an output level where \( MR > MC \) or where \( MR < MC \) will yield lower profits.

Profit Maximization for a Monopolist

<table>
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<th>Price</th>
<th>TR</th>
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<th>TC</th>
<th>MC</th>
<th>ATC</th>
<th>Profit</th>
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The Monopolist’s Price and Output Graphically

- The marginal revenue curve is a graphical measure of the change in revenue that occurs in response to a change in price.
- It tells us the additional revenue the firm will get by expanding output.

$MR = MC$ Determines the Profit-Maximizing Output**

- If $MR > MC$, the monopolist gains profit by increasing output.
- If $MR < MC$, the monopolist gains profit by decreasing output.
- If $MC = MR$, the monopolist is maximizing profit.

The Price a Monopolist Will Charge

- The $MR = MC$ condition determines the quantity a monopolist produces.
- The monopolist will charge the maximum price consumers are willing to pay for that quantity.
- That price is found on the demand curve.

The Price a Monopolist Will Charge

- To determine the profit-maximizing price (where $MC = MR$), first find the profit maximizing output.

Determining the Monopolist’s Price and Output

- Draw the firm’s marginal revenue curve.
- Determine the output the monopolist will produce by the intersection of the $MC$ and $MR$ curves.

Profits and Monopoly
Profits and Monopoly
- Determine the price the monopolist will charge for that output.
- Determine the average cost at that level of output.

Profits and Monopoly
- Determine the monopolist's profit (loss) by subtracting average total cost from average revenue ($P$) at that level of output and multiply by the chosen output.

Profits and Monopoly
- The monopolist will make a profit if price exceeds average total cost.
- The monopolist will make a normal return if price equal average total cost.
- The monopolist will incur a loss if price is less than average total cost.

A Monopolist Making a Profit
- A monopolist can make a profit.

A Monopolist Breaking Even
- A monopolist can break even.
A Monopolist Breaking Even

Price

MC

ATC

Quantity

A Monopolist Making a Loss

A monopolist can make a loss.

A Monopolist Making a Loss

Price

MC

ATC

Quantity

Profit Maximization

• The monopoly firm will not set the price arbitrarily high, the profit-maximizing price still corresponds to the point where MR=MC.

• The monopoly firm’s market power will allow the firm to achieve above-normal profits.

Profit Maximization

Monopoly Profit and Loss

• A monopolist will suspend operations in the short run if its price does not exceed the average variable cost at the quantity the firm produces.

• A monopolist will shut down permanently if revenue is not likely to equal or exceed all costs in the long run.

• In contrast, however, if a monopolist makes a profit, barriers to entry will keep other firms out of the industry.
Monopoly Myths

1. A monopolist can charge any price it wants and will reap unseemly profits by continually increasing the price.

2. A monopolist is not sensitive to customers.

3. A monopolist cannot make a loss.

All Not True!