Profit Maximization

Chapter 9-1

Profit Maximization

• The objective of a for-profit firm is to maximize profit.
• Profit is total revenue less the costs of the resources (land, labor, capital) used.
• Total revenue is the price of goods and services multiplied by the quantity sold, PQ.

Profit = PQ – Cost of land, labor and capital

Profit-Maximizing Level of Output

• The goal of the firm is to maximize profits.
• Profit is the difference between total revenue and total cost.

Total Revenue

Total Revenue = Price X Quantity

Profit-Maximizing Level of Output

• What happens to profit in response to a change in output is determined by marginal revenue (MR) and marginal cost (MC).
  • A firm maximizes profit when MC = MR.

Profit-Maximizing Level of Output

• Marginal revenue (MR) – the change in total revenue associated with a change in quantity.
• Marginal cost (MC) – the change in total cost associated with a change in quantity.
Marginal Revenue and Marginal Cost

• The Profit maximizing quantity of output can be determined by comparing marginal revenue and marginal cost.
• Marginal cost is the additional cost of producing one more unit of output.
• Marginal revenue is the additional revenue from selling one more unit of output.
• Profit is maximized at the output level where marginal revenue and marginal cost are equal.
• The supply rule is: Produce and offer for sale the quantity at which MR = MC.

MR and MC

• Marginal Revenue = Change in Total Revenue/Change in Total Output
  \[ MR = \frac{\Delta TR}{\Delta Q} \]
• Marginal Cost = Change in Total Cost/Change in Total Output
  \[ MC = \frac{\Delta TC}{\Delta Q} \]
• Comparing marginal revenue and marginal cost determines whether the firm needs to supply more or less in order to maximize profit.

Profit Maximization

Profit Maximization: \( MC = MR \)

• To maximize profits, a firm should produce where marginal cost equals marginal revenue.

How to Maximize Profit

• If marginal revenue does not equal marginal cost, a firm can increase profit by changing output.
• The supplier will continue to produce as long as marginal cost is less than marginal revenue.

How to Maximize Profit

• The supplier will cut back on production if marginal cost is greater than marginal revenue.
• Thus, the profit-maximizing condition of a competitive firm is \( MC = MR \)