

1.14. PROFIT (part 2)

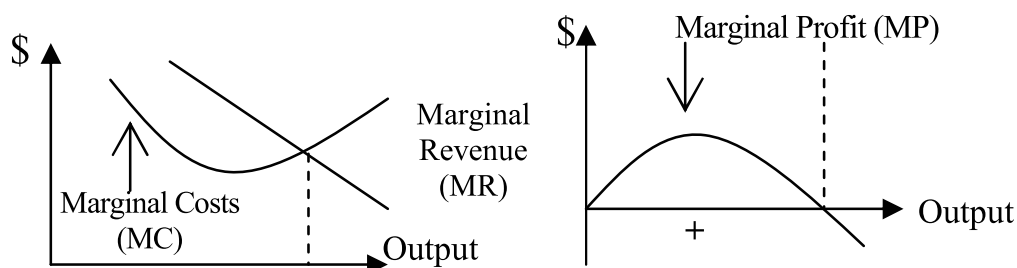
In general, marginal revenue **declines** as production **increases** because firms eventually **lower** their prices in order to sell more. As production increases, marginal costs decline at first, but then increase. That is because a firm's greatest **efficiency** lies somewhere between its level of minimum and maximum output. As output increases toward that point, the cost of producing each additional unit (its marginal cost) falls. Once the point of maximum efficiency is reached, **diminishing returns** set in, and marginal costs increase. Marginal profit is the difference between marginal revenue and marginal cost. Like marginal cost and marginal revenue, marginal profits will be positive up to a **certain level** of output and then become negative. ("Negative profits" are losses.)

How does a firm calculate its profit-maximizing level of production? If producing one more box of doughnuts adds more to total revenue than cost (marginal cost increases with production), then the firm should produce it. If producing one more box of doughnuts adds less to revenue than cost (profits are negative or less than zero), it should not be produced by a profit-maximizing firm.

Since marginal profits generally turn negative as production **exceeds** the point where labor and machinery are most efficient, a firm's profit-maximizing output is the level at which marginal profits are zero. This can be stated in a simple rule:

$$\text{Marginal Revenue} = \text{Marginal Costs.}$$

The following figure explains these concepts.



The graph shows how marginal cost (MC) rises and marginal revenue (MR) declines as the bakery increases its output of doughnuts. Since marginal profit (MP) is the difference between the two, the graph shows it declining with output and eventually becoming negative when MC is greater than MR. Now it is clear why a firm wants to produce more until MR equals MC. Up to that point the firm is adding to profits; after that point profits are becoming smaller.