

Chapter 8: Pure Competition in the Short Run

If the principles of supply and demand are the basis of our market economy, why is it possible for monopolies to charge very high prices for their products, while individual farmers dare not raise their prices for fear of losing customers? The answer is that these firms operate in different market structures, and the level of competition in each industry determines the market power of the firm. In Chapters 8-11 we reach the heart of microeconomics, exploring concepts which comprise more than 1/4 of the AP Microeconomics Exam. Chapter 8 describes pure (perfect) competition, explaining how firms make profit-maximizing, loss-minimizing, and shutdown decisions.

In purely competitive industries (such as corn or hogs), a large number of independent firms produce identical products and firms can easily enter the industry. As a result, these firms have no market power over prices and must accept the price set in the industry. Monopolistically competitive industries (such as gas stations or dry cleaners) share the characteristics of pure competition except that the products are not identical. Firms advertise those differences to develop brand loyalty, giving them only a small amount of market power. Oligopolies (such as soft drink producers or airlines) result when only a few firms dominate the industry and erect significant barriers to entry by competitors. As a result, they hold significant market power. Finally, a monopoly (such as a utility company) is a sole producer, blocking rivals from entering the industry and wielding considerable market power unless it is regulated by the government.

Using a total cost—total revenue approach to determining profit-maximizing output, total cost and total revenue are graphed together. At each output where total cost is greater than total revenue, the firm incurs a loss; where total revenue is greater than total cost, the firm experiences an economic profit. Using this model, the firm maximizes profit at the output where the total revenue is the greatest vertical distance above the total cost.

Using a marginal cost—marginal revenue approach, markets for purely competitive industries are illustrated in side-by-side graphs representing the industry and an individual firm in the industry. The industry graph is the traditional supply and demand graph, and equilibrium is used to establish the industry price. The individual firm is a “price taker,” as the industry price becomes the perfectly elastic demand curve for the firm. That demand curve also represents the marginal revenue and the average revenue of the firm, as every product sells for exactly the same price. The marginal cost curve, with the portion above the average variable cost representing the firm’s short-run supply curve, is then placed on the individual firm graph. ***Profit-maximizing output is achieved where the marginal cost equals the marginal revenue.*** This rule is true regardless of which market structure the firm utilizes, and this very question is likely to be asked more than once, in various ways, in both the multiple-choice and free-response questions of the AP exam.

To determine whether the firm is achieving a profit, loss, or just breaking even, we need to know the position of the average total cost and average variable cost curves. At the output where $MC=MR$, if average total cost is lower than the price, the firm is earning economic profit. At the $MC=MR$ output, if average total cost is equal to the price, the firm is just breaking even, covering its economic costs. But if average total cost is higher than the price at the $MC=MR$ output, the firm is experiencing a loss. At

that point, the firm must make a decision whether to continue operating in the short run to minimize its losses, or shut down. At the $MC=MR$ output, if the price is still higher than the average variable cost, the firm can afford to pay for workers and materials, and still have money left to put toward the fixed cost, so it is better off minimizing its losses and staying in business in the short run. But if the average variable cost is higher than the price at the $MC=MR$ output, the firm cannot even cover its variable costs and should shut down. These profit, loss, and shutdown rules are also true for firms in every market structure and will likely be the subject of a question or two on the AP exam.

Material from Chapter 8 appears on the AP Microeconomics Exam in a large number of multiple-choice questions, and a free-response question about decision-making in at least one of the market structures is part of nearly every exam. An understanding of the differences among the market structures is key to success. It is critically important to be able to illustrate the side-by-side graphs of the purely competitive industry and individual firm, as well determining the profit-maximizing output and illustrating the difference between a firm experiencing a profit or loss in the short run. Sketching these graphs at the beginning of the multiple-choice portion of the AP Microeconomics Exam can be very helpful in discerning (and eliminating) answers.

An important concept that frequently appears on the AP Microeconomics Exam, but not in this textbook, is the differing effects of a change in fixed or variable costs. If a fixed cost (a property tax or the cost of an annual license) increases, the average fixed cost and average total cost increase for the firm, but nothing else changes. Because the marginal cost and marginal revenue did not change, the firm's output does not change. However, if a variable cost (the wage or the cost of materials) increases, the marginal cost, average variable cost, and average total cost all increase. Because $MC=MR$ at a lower output now, the firm's profit-maximizing output decreases. Drawing the individual firm graph and practicing the changes in each kind of cost can help to cement these concepts.