

CHAPTER 7 KEY CONCEPTS AND SUMMARY

7.1 Explicit and Implicit Costs, and Accounting and Economic Profit

Privately owned firms are motivated to earn profits. Profit is the difference between revenues and costs. While accounting profit considers only explicit costs, economic profit considers both explicit and implicit costs.

7.2 Production in the Short Run

Production is the process a firm uses to transform inputs (e.g. labor, capital, raw materials, etc.) into outputs. It is not possible to vary fixed inputs (e.g. capital) in a short period of time. Thus, in the short run the only way to change output is to change the variable inputs (e.g. labor). Marginal product is the additional output a firm obtains by employing more labor in production. At some point, employing additional labor leads to diminishing marginal productivity, meaning the additional output obtained is less than for the previous increment to labor. Mathematically, marginal product is the slope of the total product curve.

7.3 Costs in the Short Run

For every input (e.g. labor), there is an associated factor payment (e.g. wages and salaries). The cost of production for a given quantity of output is the sum of the amount of each input required to produce that quantity of output times the associated factor payment.

In a short-run perspective, we can divide a firm's total costs into fixed costs, which a firm must incur before producing any output, and variable costs, which the firm incurs in the act of producing. Fixed costs are sunk costs; that is, because they are in the past and the firm cannot alter them, they should play no role in economic decisions about future production or pricing. Variable costs typically show diminishing marginal returns, so that the marginal cost of producing higher levels of output rises.

We calculate marginal cost by taking the change in total cost (or the change in variable cost, which will be the same thing) and dividing it by the change in output, for each possible change in output. Marginal costs are typically rising. A firm can compare marginal cost to the additional revenue it gains from selling another unit to find out whether its marginal unit is adding to profit.

We calculate average total cost by taking total cost and dividing by total output at each different level of output. Average costs are typically U-shaped on a graph. If a firm's average cost of production is lower than the market price, a firm will be earning profits.

We calculate average variable cost by taking variable cost and dividing by the total output at each level of output. Average variable costs are typically U-shaped. If a firm's average variable cost of production is lower than the market price, then the firm would be earning profits if fixed costs are left out of the picture.

7.4 Production in the Long Run

In the long run, all inputs are variable. Since diminishing marginal productivity is caused by fixed capital, there are no diminishing returns in the long run. Firms can choose the optimal capital stock to produce their desired level of output.

7.5 Costs in the Long Run

A production technology refers to a specific combination of labor, physical capital, and technology that makes up a particular method of production.

In the long run, firms can choose their production technology, and so all costs become variable costs. In making this choice, firms will try to substitute relatively inexpensive inputs for relatively expensive inputs where possible, so as to produce at the lowest possible long-run average cost.

Economies of scale refers to a situation where as the level of output increases, the average cost decreases. Constant returns to scale refers to a situation where average cost does not change as output increases. Diseconomies of scale refers to a situation where as output increases, average costs also increase.

The long-run average cost curve shows the lowest possible average cost of production, allowing all the inputs to production to vary so that the firm is choosing its production technology. A downward-sloping LRAC shows economies of scale; a flat LRAC shows constant returns to scale; an upward-sloping LRAC shows diseconomies of scale. If the long-run average cost curve has only one quantity produced that results in the lowest possible average cost, then all of the firms competing in an industry should be the same size. However, if the LRAC has a flat segment at the bottom, so that a firm can produce a range of different quantities at the lowest average cost, the firms competing in the industry will display a range of sizes. The market demand in conjunction with the long-run average cost curve determines how many firms will exist in a given industry.

If the quantity demanded in the market of a certain product is much greater than the quantity found at the bottom of the long-run average cost curve, where the cost of production is lowest, the market will have many firms competing. If the quantity demanded in the market is less than the quantity at the bottom of the LRAC, there will likely be only one firm.

CHAPTER 8 KEY CONCEPTS AND SUMMARY

8.1 Perfect Competition and Why It Matters

A perfectly competitive firm is a price taker, which means that it must accept the equilibrium price at which it sells goods. If a perfectly competitive firm attempts to charge even a tiny amount more than the market price, it will be unable to make any sales. In a perfectly competitive market there are thousands of sellers, easy entry, and identical products. A short-run production period is when firms are producing with some fixed inputs. Long-run equilibrium in a perfectly competitive industry occurs after all firms have entered and exited the industry and seller profits are driven to zero.

Perfect competition means that there are many sellers, there is easy entry and exiting of firms, products are identical from one seller to another, and sellers are price takers.

8.2 How Perfectly Competitive Firms Make Output Decisions

As a perfectly competitive firm produces a greater quantity of output, its total revenue steadily increases at a constant rate determined by the given market price. Profits will be highest (or losses will be smallest) at the quantity of output where total revenues exceed total costs by the greatest amount (or where total revenues fall short of total costs by the smallest amount). Alternatively, profits will be highest where marginal revenue, which is price for a perfectly competitive firm, is equal to marginal cost. If the market price faced by a perfectly competitive firm is above average cost at the profit-maximizing quantity of output, then the firm is making profits. If the market price is below average cost at the profit-maximizing quantity of output, then the firm is making losses.

If the market price is equal to average cost at the profit-maximizing level of output, then the firm is making zero profits. We call the point where the marginal cost curve crosses the average cost curve, at the minimum of the average cost curve, the “zero profit point.” If the market price that a perfectly competitive firm faces is below average variable cost at the profit-maximizing quantity of output, then the firm should shut down operations immediately. If the market price that a perfectly competitive firm faces is above average variable cost, but below average cost, then the firm should continue producing in the short run, but exit in the long run. We call the point where the marginal cost curve crosses the average variable cost curve the shutdown point.

8.3 Entry and Exit Decisions in the Long Run

In the long run, firms will respond to profits through a process of entry, where existing firms expand output and new firms enter the market. Conversely, firms will react to losses in the long run through a process of exit, in which existing firms cease production altogether. Through the process of entry in response to profits and exit in response to losses, the price level in a perfectly competitive market will move toward the zero-profit point, where the marginal cost curve crosses the AC curve at the minimum of the average cost curve.

The long-run supply curve shows the long-run output supplied by firms in three different types of industries: constant cost, increasing cost, and decreasing cost.

8.4 Efficiency in Perfectly Competitive Markets

Long-run equilibrium in perfectly competitive markets meets two important conditions: allocative efficiency and productive efficiency. These two conditions have important implications. First, resources are allocated to their best alternative use. Second, they provide the maximum satisfaction attainable by society.