In our example, the economic profit is $24,000 (= $120,000 of revenue minus $96,000 of explicit and implicit costs). An economic profit is not a cost, because by definition it is a return in excess of the normal profit required to retain the entrepreneur in this particular line of production. Even if the economic profit is zero, the entrepreneur is still covering all explicit and implicit costs, including a normal profit. In our example, as long as accounting profit is $31,000 or more (so that economic profit is zero or more), you will be earning the $5000 normal profit and will continue to operate your CD store.

Figure 22-1 shows the relationship among various cost and profit concepts. To test yourself, you might want to enter cost data from our example in the appropriate blocks. **(Key Question 2)**

Short Run and Long Run

When the demand for a firm's product changes, the firm's profitability may depend on how quickly it can adjust the amounts of the various resources it employs. The quantities employed of many resources—most labor, raw materials, fuel, and power—can be varied easily and quickly. Capital resources, however, require more time for adjustment. The capacity of a manufacturing plant, that is, the size of the factory building and the amount of machinery and equipment in it, can be varied only over a considerable period of time. In some heavy industries it may take several years to alter plant capacity. Because of these differences in adjustment time, economists find it useful to distinguish between the *short run* and the *long run*.

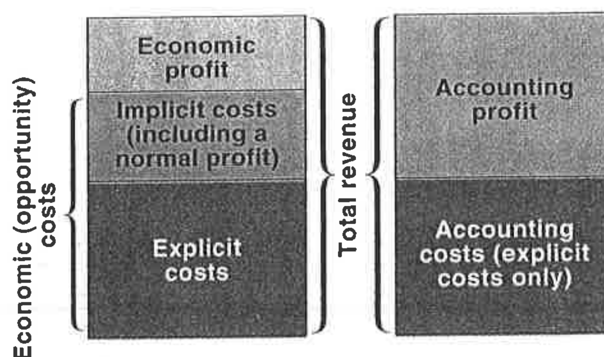

FIGURE 22-1 Economic and accounting profits Economic profit is equal to total revenue less opportunity costs. Opportunity costs are the sum of explicit and implicit costs and include a normal profit to the entrepreneur. Accounting profit is equal to total revenue less accounting (explicit) costs.

Short Run: Fixed Plant The **short run** is a period too brief for a firm to alter its plant capacity, yet long enough to permit a change in the degree to which the fixed plant is used. The firm's plant capacity is fixed in the short run. However, the firm can vary its output by applying larger or smaller amounts of labor, materials, and other resources to that plant. Existing plant capacity can be used more or less intensively in the short run.

Long Run: Variable Plant From the viewpoint of an existing firm, the **long run** is a period long enough for that firm to adjust the quantities of *all* the resources it employs, including plant capacity. From the industry's viewpoint, the long run also encompasses enough time for existing firms to dissolve and leave the industry or for new firms to be created and enter the industry. *While the short run is a "fixed-plant" period, the long run is a "variable-plant" period.*

Illustrations If Boeing hires 100 extra workers for one of its commercial airline plants or adds an entire shift of workers, we are speaking of the short run. If it adds a new production facility and installs more equipment, we are referring to the long run. The first situation is a *short-run adjustment;* the second is a *long-run adjustment.*

Note that the short run and the long run are *conceptual* periods rather than calendar time periods. In light-manufacturing industries, changes in plant capacity may be accomplished almost overnight. A small T-shirt firm can increase its plant capacity in days by ordering and installing a couple of new cutting tables and several extra sewing machines. But for heavy industry the long run is a different story. Exxon may require several years to construct a new oil refinery.

QUICK REVIEW 22-1

- Explicit costs are money payments a firm makes to outside suppliers of resources; implicit costs are the opportunity costs associated with a firm's use of resources it owns.
- Normal profit is the implicit cost of entrepreneurship. Economic profit is total revenue less all explicit and implicit costs, including normal profit.
- In the short run a firm's plant capacity is fixed; in the long run a firm can vary its plant size and firms can enter or leave the industry.