***Chapter 1*:**

**MANAGERS, PROFITS, AND MARKETS**

# Essential Concepts

1. Managerial economics applies microeconomic theory—the study of the behavior of individual economic agents—to business problems in order to teach business decision makers how to use economic analysis to make decisions that will achieve the firm’s goal—maximization of profit.
2. Economic theory helps managers understand real-world business problems by using simplifying assumptions to abstract away from irrelevant ideas and information and turn complexity into relative simplicity.
3. *Microeconomics* is the study and analysis of the behavior of individual segments of the economy: individual consumers, workers and owners of resources, individual firms, industries, and markets for goods and services. Using marginal analysis, microeconomics provides the foundation for understanding the everyday business decisions managers routinely make in running a business. Such decisions are frequently referred to as *business practices* or *tactics*.
4. *Industrial organization* is a specialized branch of microeconomics that focuses on the behavior and structure of firms and industries. Industrial organization supplies the foundation for understanding *strategic decisions* through the application of game theory.
5. Strategic decisions differ from routine business practices or tactics because, in contrast to routine business practices, strategic decisions seek to shape or alter the conditions under which a firm competes with its rivals in ways that will increase and/or protect the firm’s long-run profit. While routine business practices are *necessary* for keeping organizations moving toward their goal of profit-maximization, strategic decisions are generally *optional* actions managers can take as circumstances permit.
6. Industrial organization identifies seven economic forces that promote long-run profitability: few close substitutes, strong entry barriers, weak rivalry within markets, low market power of input suppliers, low market power of consumers, abundant complementary products, and limited harmful government intervention.
7. The economic cost of using resources to produce a good or service is the opportunity cost to the owners of the firm using those resources. The opportunity cost of using any kind of resource is what the owners of the firm must give up to use the resource.
8. Total economic cost is the sum of the opportunity costs of market-supplied resources plus the opportunity costs of owner-supplied resources. The opportunity costs of using market-supplied resources are the out-of-pocket monetary payments made to the owners of resources, which are called *explicit costs*. The opportunity cost of using an owner-supplied resource is the best return the owners of the firm could have received had they taken their own resource to market instead of using it themselves. Such nonmonetary opportunity costs are called *implicit costs*.
9. Businesses may incur numerous kinds of implicit costs, but the three most important types of implicit costs are (1) the opportunity cost of cash provided by owners, known as equity capital, (2) the opportunity cost of using land or capital owned by the firm, and (3) the opportunity cost of the owner’s time spent managing the firm or working for the firm in some other capacity.
10. Economic profit is the difference between total revenue and total economic cost:

Economic profit = Total revenue – Total economic cost

= Total revenue – Explicit costs – Implicit costs

Economic profit belongs to the owners and will increase the wealth of the owners. When revenues fall short of total economic cost, economic profit is negative, and the loss must be paid for out of the wealth of the owners.

1. When accountants calculate business profitability for financial reports, they follow a set of rules known as “generally accepted accounting principles” or GAAP. These rules, which are constructed by the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) do not allow accountants to deduct most types of implicit costs for the purposes of calculating taxable accounting profit. Thus, accounting profit differs from economic profit because accounting profit does not subtract from total revenue the implicit costs of using resources.

Accounting profit = Total revenue – Explicit costs

1. Since the owners of firms must cover the costs of all resources used by the firm, maximizing economic profit, rather than accounting profit, is the objective of the firm’s owners.
2. The value of a firm is the price for which it can be sold, and that price is equal to the present value of the expected future profit of the firm.
3. The risk associated with not knowing future profits of a firm is accounted for by adding a risk premium to the discount rate used for calculating the present value of the firm’s future profits. The larger (smaller) the risk associated with future profits, the higher (lower) the risk premium used to compute the value of the firm, and the lower (higher) the value of the firm will be.
4. If cost and revenue conditions in any period are independent of decisions made in other time periods, a manager will maximize the value of a firm by making decisions that maximize profit in every single time period.
5. Taking a course in managerial economics can help you avoid making a number of common mistakes in business decision making: never increase output simply to reduce average costs, generally avoid the pursuit of market share because doing so usually lowers profit, focus on maximizing total profit rather than profit margin, understand that maximizing total revenue does not maximize profit, and avoid the use of cost-plus pricing methods when setting prices.
6. The decision to hire professional managers to run a business separates business ownership and management and creates a principal-agent relationship in which a firm’s owner (the principal) contracts with a CEO or executive management team (the agent) to perform tasks designed to further the objectives or goals of the owner. Contracts between owners and managers cannot be designed and executed perfectly because it is nearly impossible for owners to foresee all of the many ways that managers could behave opportunistically to benefit themselves at the expense of the owners.
7. A principal-agent problem arises when owners cannot be certain that managers are making decisions to further the owner’s objective, which is to maximize the value of the firm. A principal–agent problemrequires the presence of *two* conditions: (1) the manager’s objectives must be different from those of the owner, and (2) the owner must find it impossible or simply too costly to monitor and verify that the management is indeed advancing the owner’s objective by making decisions that will maximize the firm’s value.
8. When the goals of owners are different from the goals of managers, economists say that owner and manager goals are *not aligned* or that managers and owners *possess conflicting objectives*. A manager, like any self-interested person, will search for opportunities to make decisions for the business that promote the best interests of the manager, and some of these decisions will harm the owners of the firm. These conflicting managerial actions might include taking excessive perks or following unprofitable pursuits the managers finds personally satisfying such as increasing the size of the firm or its market share.
9. When the objectives of owners and managers are not aligned, it makes sense for the owners to include legal stipulations in the manager’s contract forcing managers to make decisions that are strictly designed to generate the greatest possible profit and value for the firm. Monitoring managers can be largely impossible when managers are able to take hidden actions that cannot be observed by owners. Hidden actions are possible when there is asymmetric information between owners and managers. Asymmetric information means that managers possess more or better information than owners possess about profit opportunities available to the firm and the nature of the decisions required to maximize the firm’s profit.
10. When managers behave opportunistically by exploiting information asymmetries to take hidden actions harming owners but benefiting managers in some way then a principle-agent problem called moral hazard is created. Moral hazard is both a problem of nonaligned objectives and a problem of harmful hidden actions. If either one of these two aspects is missing then there is no moral hazard problem.
11. In order to address principal-agent problems caused by nonalignment of owner and management goals, owners can employ a variety of corporate control mechanisms:
    * 1. Require managers to hold enough of the firm’s equity stock to make managers care intensely about maximize the value of the firm,
      2. Increase the number of outsiders serving on the company’s board of directors, and
      3. Finance corporate investments with debt instead of equity.

Beyond these three internal measures, there is an important external force or event – a corporate takeover-- that can also motivate managers to make decisions that maximize the value of a firm.

1. A price-taking firm cannot set the price of the product it sells because price is determined strictly by the market forces of demand and supply.
2. A price-setting firm sets the price of its product because it possesses some degree of market power, which is the ability to raise price without losing all sales.
3. A market is any arrangement that enables buyers and sellers to exchange goods and services, usually for money payments. Markets exist to reduce transaction costs, the costs of making a transaction.
4. Market structure is a set of characteristics that determines the economic environment in which a firm operates:
   * 1. the number and size of firms operating in the market,
     2. the degree of product differentiation, and
     3. the likelihood of new firms’ entering.
5. Markets may be structured as one of four types:
   * 1. A perfectly competitive market has a large number of relatively small firms selling an undifferentiated product in a market with no barriers to entry.
     2. A monopoly market is one in which a single firm, protected by a barrier to entry, produces a product that has no close substitutes.
     3. In monopolistically competitive markets, a large number of relatively small firms produce differentiated products without any barriers to entry.
     4. In oligopoly markets, there are only a few firms whose profits are interdependent—each firm’s decisions about pricing, output, advertising, and so forth affects all other firms’ profits—with varying degrees of product differentiation.
6. Globalization of markets is the economic integration of markets located in nations around the world. Globalization provides managers with both an opportunity to sell more goods and services to foreign buyers as well as the threat of increased competition from foreign producers.

# Answers to Applied Problems

1. To say that a decision rule or process does not work in theory is to say that the answer produced by the rule is not going to be the “correct” answer. In business decision making, managers get the “correct” answer when their solutions are ones that lead to the greatest level of profit.

For example, it is rather easy to calculate the profit margin for a good or service and to make a pricing decision that will maximize the profit margin on the good or service. While that may be a very practical method of determining price, pricing to maximize profit margin does not in theory lead to the price that maximizes the profit or value of the firm –except by accident in extremely rare circumstances. The same can be said for making decisions that lead to the lowest possible unit or average cost of production. Unit cost is easy to measure, and so it is useful in practice, yet unit cost is not theoretically the correct measure of cost –i.e., managers cannot, except by accident, find the profit-maximizing price or output level by using average cost data. You will learn that the theoretically correct cost measure is marginal cost for making profit-maximizing decisions.

Your training in managerial economics is designed to teach you the best and correct ways to make business decisions, so that you do not settle for the numerous incorrect methods that are still used in many businesses today. In other words, your goal should be to devise ways to make the theoretically correct decision methods work for your company.

2. a. Total explicit cost = $793,000 (= 555,000 + 45,000 + 28,000 + 165,000)

Total implicit cost = $190,000 (= 175,000 + 0.15 × 100,000)

Total economic cost = $983,000 (= 793,000 + 190,000)

1. Accounting profit = $177,000 (= 970,000 ­– 793,000)
2. Economic profit = –$13,000 (= 970,000 – 983,000)

d. The owner’s accounting profit is $13,000 less than what he could have earned in salary and return on investment of his $100,000, i.e., his economic profit is –$13,000. Thus, he would have made $13,000 more if he had kept his job and invested his $100,000 in stocks of other businesses.

3. The $8,000 of lost income, even though not tax-deductible, is indeed part of the economic cost the doctor incurs by going to Mexico to treat patients, and the doctor should consider this $8,000 cost in making her decision to travel to Mexico.

4. a. Burton's explicit cost's are $18,000 per month. His implicit costs are $20,000 per month ($15,000 + $5,000).

b. Opportunity cost = explicit + implicit costs = $18,000 + 20,000 = $38,000 per month

c. Burton Cummings’ costs of production (= $38,000/month) exceed his revenues by $13,000 (= 38,000 – 25,000). Rather than lose $13,000 per month, Burton could rent his rig (and receive $15,000 per month) and drive trucks for another firm (and earn $5,000 per month). With this use of his resources he would earn $20,000 per month. Or, Burton could try his luck as a singer in a rock band.

5. One cost of opening a tennis shop would be the forgone salary of the previous job. Given that Nadal’s or Venus’ foregone income would be much larger than that of a university coach, their opportunity cost would be higher.

6. Linking the board of directors' compensation to return on equity creates an incentive for management to pursue profit-maximization as a goal, thereby reducing the agency problem between managers and shareholders. Directors have better, easier, and cheaper access to information about the firm's revenues and costs. Shareholders are numerous and each one has only a relatively small stake in the profitability of the firm. It is generally easier for a shareholder simply to sell its shares and reinvest in another company.

7. a. Some Marriott franchises are shirking their responsibility to maintain high quality hotels, and this shirking damages the reputation of all Marriott franchises.

b. Poorly run franchises damage the Marriott reputation and reduce the profitability of hotels owned by Marriott.

1. Where there is little repeat business, there is less incentive for a hotel to provide quality service. Where there is a lot of repeat business, franchises will have an incentive to maintain quality to attract repeat business.

8. Even though the financial arrangement with Delta and United limited the growth in SkyWest’s economic profits in future years, the agreement decreased the risk associated with SkyWest’s profits. In the Fortune article, one financial analyst states, “They (SkyWest) shield themselves from the factors that lead to volatility in earnings—fuel prices, ticket prices, and load factors—and bring investors the certainty they are looking for.” The lower level of risk reduces the risk-adjusted discount rate, and, for a given stream of profits, the value of the SkyWest rises.

**Answers to Mathematical Exercises**

1. a. *PV* = *NCF*/(1 + *r*)t = $1,000/(1.065) = $938.97

b. *PV* = $1,000/(1.065)2 = $881.66

1. *PV* = $1,000/(1.065)3 = $827.85

2. The present value is calculated as follows:



3. Option *A*: Ashton pays Demi $1,000,000 each year for 10 years (Ashton wishes to make each payment at year-end.)

Option *B*: Ashton pays Demi $5,000,000 in cash now.

If the appropriate interest rate is 8 percent:

*PV*Option *A* = $1,000,000/(1.08)1 +    + $1,000,000/(1.08)10 = $6,710,081

*PV*Option *B* = $5,000,000

Clearly, Demi should take option *A* and Ashton should want to pay her $5,000,000 now.

If the appropriate interest rate is 20 percent:

*PV*Option A = $1,000,000/(1.20)1 +    + $1,000,000/(1.20)10 = $4,192,472

*PV*Option B = $5,000,000

In this case, Demi should demand $5,000,000 cash now, and Ashton should try to talk her into taking $10,000,000 spread over ten years.

4. Since the lease payment is a constant amount for each of the 100 years –and 100 years is a long time, we can get a very good approximation of the present value by using the formula for a perpetual stream of profit payments: . The approximate present value is $500,000 = $20,000/.04.