**Chapter 1**

**NATURE AND SCOPE OF MANAGERIAL ECONOMICS**

# QUESTIONS & ANSWERS

***Q1.1*** *Is it appropriate to view firms primarily as economic entities?*

# Q1.1 ANSWER

Yes. Firms represent a combination of people, physical assets, and information (financial, technical, marketing, and so on). People directly involved include stockholders, managers, workers, suppliers, and customers. Businesses use scarce resources that would otherwise be available for other purposes, pay income and other taxes, provide employment opportunities, and are responsible for much of the material well-being of our society. Thus, all of society is indirectly involved in the firm's operation. Firms exist because they are useful in the process of allocating resources -- producing and distributing goods and services. As such, they are basically economic entities.

***Q1.2*** *Explain how the valuation model given in Equation 1.2 could be used to describe the integrated nature of managerial decision making across the functional areas of business.*

# Q1.2 ANSWER

As seen in the text, Equation 1.2 can be written:

n

Value =



t=1

TRt - TCt

(1 + i )t

where TR is total revenue, TC is total cost, i is an appropriate (risk-adjusted) interest rate, and t indicates the relevant time period. Thus, the value of the firm is the discounted present value of the stream of expected future profits.

Each of the functional areas of business plays an important role in managerial decision making since each area provides vital input into the value maximization process. The marketing department of a firm has a major responsibility for sales, the production department a major responsibility for costs, and the finance department has a major responsibility for acquiring the capital necessary to support the firm's investment activities. There are many important overlaps among these functional areas-

-the marketing department, for example, can help reduce the costs associated with a

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given level of output by affecting the size and timing of customer orders. The production department can stimulate sales by improving quality and making new products available to sales personnel. Other departments within the firm--for example, accounting, personnel, transportation, and engineering--provide information or services vital to both continued sales growth and cost control. These activities all affect the risks of the firm and thereby the discount rate used to determine present values. Thus, various decisions in different departments of the firm can be appraised in terms of their effects on the value of the firm as expressed in Equation 1.2. Therefore, the value maximization model is useful in describing the integrated nature of managerial decision making across the functional areas of business.

***Q1.3*** *Describe the effects of each of the following managerial decisions or economic influences on the value of the firm:*

1. *The firm is required to install new equipment to reduce air pollution.*
2. *Through heavy expenditures on advertising, the firm's marketing department increases sales substantially.*
3. *The production department purchases new equipment that lowers manufacturing costs.*
4. *The firm raises prices. Quantity demanded in the short run is unaffected, but in the longer run, unit sales are expected to decline.*
5. *The Federal Reserve System takes actions that lower interest rates dramatically.*
6. *An expected increase in inflation causes generally higher interest rates, and, hence, the discount rate increases.*

# Q1.3 ANSWER

1. The most direct effect of a requirement to install new pollution control equipment would be an increase in the operating cost component of the valuation model. Secondary effects might be expected in the discount rate due to an increase in regulatory risk, and in the revenue function if consumers react positively to the installation of the pollution control equipment in production facilities.
2. All three major components of the valuation model--the revenue function, cost function, and the discount rate--are likely to be affected by an increase in advertising. Revenues and cost will both increase as output is expanded. The discount rate may be affected if the firm's profit outlook changes significantly

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because of increased demand (growth) or if borrowing is necessary to fund a rapid expansion of plant and equipment to meet increased demand.

1. The primary effect of newer and more efficient production equipment is a reduction in the total cost component of the valuation model. Secondary effects on firm revenues could also be important if lower costs make price reductions possible and result in an increase in the quantity demanded of the firm's products. Likewise, the capitalization rate or discount factor can be affected by the firm's changing prospects.
2. The time pattern of revenues is affected by such a pricing decision to raise prices in the near term. This will alter production relationships and investment plans, and affect the valuation model through the cost component and capitalization factor.
3. A general lowering of interest rates leads to a reduction in the cost of capital or discount rate in the valuation model.
4. Higher rates of inflation, leading to an increase in the discount rate, cause the present value of a constant income stream to decline. Unless the firm is able to increase product prices in order to maintain profit margins, the value of the firm falls as inflation and the discount rate increases. Of course, the economic effects of inflation on the economic value of the firm are complex, involving both asset and liability valuations, so determining the overall effect of inflation on the economic value of individual firms is a difficult task.

***Q1.4*** *In the wake of corporate scandals at Enron, Tyco, and WorldCom, some argue that managers of large, publicly owned firms sometimes make decisions to maximize their own welfare as opposed to that of stockholders. Does such behavior create problems in using value maximization as a basis for examining managerial decision making?*

# Q1.4 ANSWER

Yes, like virtually all theory, the value maximization model involves some simplification and abstraction from reality. The important question is whether or not the model is realistic enough to provide useful insight into the managerial decision making process. While managers undoubtedly do take their own welfare into account when making decisions, evidence strongly indicates that market pressures provide a strong incentive for managers to act in accord with the dictates of economic efficiency. Furthermore, managers who pursue policies detrimental to stockholder interests run the risk of being replaced following stockholder "revolts" or unfriendly takeovers.

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***Q1.5*** *How is the popular notion of business profit different from the economic profit concept? What role does the idea of normal profits play in this difference?*

# Q1.5 ANSWER

The key distinction is that business or accounting profit provides a measure of the total return on capital investment, whereas economic profit refers to the return on capital in excess of that required (expected) by investors. Normal profit refers to the risk-adjusted rate of profit required by investors to attract and retain funds for capital investment. Many of the profit theories described in the chapter actually confound the business and economic profit concepts.

***Q1.6*** *Which concept--the business profit concept or the economic profit concept--provides the more appropriate basis for evaluating business operations? Why?*

# Q1.6 ANSWER

The economic profit concept provides the most appropriate basis for evaluating the operations of a business since it allows for a risk-adjusted normal rate of return on all capital devoted to the enterprise. Even when business profits are substantial, economic profits can sometimes be negative given the effects of risk, inflation, and other factors. Substantial business profits are no guarantee to the growth, or even maintenance, of capital investment. In actual practice, investors adjust reported accounting data to account for additional factors that must be considered.

***Q1.7*** *Some argue that prescription drug manufacturers, like Pfizer, exploit consumers with high prices and make excessive profits. Others contend that high profits are necessary to give leading pharmaceutical companies the incentive to conduct risky research and development. What factors should be considered in examining the adequacy of profits for a firm or industry?*

# Q1.7 ANSWER

The primary factors one needs to include in an analysis of the adequacy of profits are interest rate levels and risk. Normal profits must be large enough to fully compensate investors for three costs: providing capital and the postponement of consumption, sometimes called the pure or economic rate of interest, any potential loss of purchasing power due to inflation, and the potential business risk inherent in any given investment. The question of profit adequacy or inadequacy can only be answered in terms of the requirements for meeting each of these return criteria. In terms of empirical evidence, if entry is eager and widespread, it is likely that entrants see excessive profits. However, if entry is slow or nonexistent, then it seems difficult to argue that incumbents are reaping economic profits. The pharmaceutical industry is indeed risky, but entry from the biotechnology industry suggests that opportunities for above-normal profits are present.

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***Q1.8*** *Why is the concept of enlightened self-interest important in economics?*

# Q1.8 ANSWER

The concept of self-interest is important because it provides the underlying rationale for economic decisions. Consumers and producers make economic decisions in such a manner as to further their own material well-being. Consumers make purchase decisions when goods and services represent a relative bargain in terms of the benefits they provide. Firms and other producers make the decision to supply output when doing so is profitable. In both cases, furthering the self-interest of each decision maker provides the underlying rationale for economic decisions. Interestingly, the desire to further each decision maker's own self-interest results in voluntary economic exchange that is *mutually* beneficial. A business or consumer transaction takes place if and only if *both* parties benefit.

***Q1.9*** *"In the long run, a profit-maximizing firm would never knowingly market unsafe products. However, in the short run, unsafe products can do a lot of damage." Discuss this statement.*

# Q1.9 ANSWER

The marketing of unsafe products is clearly inconsistent with long-run profit maximization. For example, no pharmaceutical manufacturer would knowingly market drugs with negative side-effects much greater than intended benefits. Unfortunately, undercapitalized or "hit and run" manufacturers can inflict a lot of damage in the short run before the negative side-effects of drugs and other products are fully realized. When the quantity and quality of consumer information is limited, mistakes can and do occur. From this perspective, government or industry regulation of product safety has the potential to reduce the social costs that result from unsafe products.

***Q1.10*** *Is it reasonable to expect firms to take actions that are in the public interest but are detrimental to stockholders? Is regulation always necessary and appropriate to induce firms to act in the public interest?*

# Q1.10 ANSWER

No, the existence of firms is due to the economic advantages of such organizations. It is not reasonable to expect firms to voluntarily undertake any action that is *truly detrimental* to its owners or managers. When such actions are deemed desirable, regulation by society will no doubt be required. It should be emphasized, however, that this does not mean that firms cannot be expected to undertake "socially responsible" activity. In many instances, such activities can be expected to have a beneficial effect on sales, taxes, labor relations, production costs, and so on. In these instances, the firm

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could well be expected to undertake such activities voluntarily. By understanding the economics of business decisions, one is in a much better position to understand the motivation behind managerial decisions and to analyze the effects of various constraints *and* incentives designed to modify business practices.

# CASE STUDY FOR CHAPTER 1

***Is Coca-Cola the “Perfect” Business?1***

*What does a perfect business look like? For Warren Buffett and his partner Charlie Munger, vice- chairman of Berkshire Hathaway, Inc., it looks a lot like Coca-Cola. To see why, imagine going back in time to 1885, to Atlanta, Georgia, and trying to invent from scratch a nonalcoholic beverage that would make you, your family, and all of your friends rich.*

*Your beverage would be nonalcoholic to ensure widespread appeal among both young and old alike. It would be cold rather than hot so as to provide relief from climatic effects. It must be ordered by name--a trademarked name. Nobody gets rich selling easy-to-imitate generic products. It must generate a lot of repeat business through what psychologists call conditioned reflexes. To get the desired positive conditioned reflex, you will want to make it sweet, rather than bitter, with no after-taste. Without any after-taste, consumers will be able to drink as much of your product as they like. By adding sugar to make your beverage sweet, it gains food value in addition to a positive stimulant. To get extra-powerful combinatorial effects, you may want to add caffeine as an additional stimulant. Both sugar and caffeine work; by combining them, you get more than a double effect; you get what Munger calls a “lollapalooza” effect. Additional combinatorial effects could be realized if you design the product to appear exotic. Coffee is another popular product, so making your beverage dark in color seems like a safe bet. By adding carbonation, a little fizz can be added to your beverage’s appearance and its appeal.*

*To keep the lollapalooza effects coming, you will want to advertise. If people associate your beverage with happy times, they will tend to reach for it whenever they are happy, or want to be happy. (Isn’t that always, as in “Always Coca-Cola”?) Make it available at sporting events, concerts, the beach, and at theme parks--wherever and whenever people have fun. Enclose your product in bright, upbeat colors that customers tend to associate with festive occasions (another combinatorial effect). Red and white packaging would be a good choice. Also make sure that customers associate your beverage with festive occasions. Well-timed advertising and price promotions can help in this regard--annual price promotions tied to the Fourth of July holiday, for example, would be a good idea.*

1 See Charles T. Munger, “How Do You Get Worldly Wisdom?” *Outstanding Investor Digest*, December 29, 1997, 24-31.

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*To ensure enormous profits, profit margins and the rate of return on invested capital must both be high. To ensure a high rate of return on sales, the price charged must be substantially above unit costs. Because consumers tend to be least price sensitive for moderately priced items, you would like to have a modest “price point”, say roughly $1-$2 per serving. This is a big problem for most beverages because water is a key ingredient, and water is very expensive to ship long distances. To get around this cost-of-delivery difficulty, you will not want to sell the beverage itself, but a key ingredient, like syrup, to local bottlers. By selling syrup to independent bottlers, your company can also better safeguard its “secret ingredients.” This also avoids the problem of having to invest a substantial amount in bottling plants, machinery, delivery trucks, and so on. This minimizes capital requirements and boosts the rate of return on invested capital. Moreover, if you correctly price the key syrup ingredient, you can ensure that the enormous profits generated by carefully developed lollapalooza effects accrue to your company, and not to the bottlers. Of course, you want to offer independent bottlers the potential for highly satisfactory profits in order to provide the necessary incentive for them to push your product. You not only want to “leave something on the table” for the bottlers in terms of the bottlers’ profit potential, but they in turn must also be encouraged to “leave something on the table” for restaurant and other customers. This means that you must demand that bottlers deliver a consistently high-quality product at carefully specified prices if they are to maintain their valuable franchise to sell your beverage in the local area.*

*If you had indeed gone back to 1885, to Atlanta, Georgia, and followed all of these suggestions, you would have created what you and I know as The Coca-Cola Company. To be sure, there would have been surprises along the way. Take widespread refrigeration, for example. Early on, Coca-Cola management saw the fountain business as the primary driver in cold carbonated beverage sales. They did not foretell that widespread refrigeration would make grocery store sales and in-home consumption popular. Still, much of Coca-Cola’s success has been achieved because its management had, and still has, a good grasp of both the economics and the psychology of the beverage business. By getting into rapidly growing foreign markets with a winning formula, they hope to create local brand-name recognition, scale economies in distribution, and achieve other “first mover” advantages like the ones they have nurtured in the United States for more than 100 years.*

*As shown in Figure 1.4, in a world where the typical company earns 10 percent rates of return on invested capital, Coca-Cola earns three and four times as much. Typical profit rates, let alone operating losses, are unheard of at Coca-Cola. It enjoys large and growing profits, and requires practically no tangible capital investment. Almost its entire value is derived from brand equity derived from generations of advertising and carefully nurtured positive lollapalooza effects. On an overall basis, it is easy to see why Buffett and Munger regard Coca-Cola as a “perfect” business.*

1. *One of the most important skills to learn in managerial economics is the ability to identify a good business. Discuss at least four characteristics of a good business.*
2. *Identify and talk about at least four companies that you regard as having the characteristics listed here.*

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|  | ***C.*** | *Suppose you bought common stock in each of the four companies identified here. Three years from now, how would you know if your analysis was correct? What would convince you that your analysis was wrong?* |

# CASE STUDY SOLUTION

1. Interesting perspective on the characteristics of wonderful businesses has been given by legendary Wall Street investors T. Rowe Price and Warren E. Buffett. The late T. Rowe Price was founder of Baltimore-based T. Rowe Price and Associates, Inc., one of the largest no-load mutual fund organizations in the United States, and the father of the "growth stock" theory of investing. According to Price, attractive growth stocks have low labor costs, superior research to develop products and new markets, a high rate of return on stockholder's equity (ROE), elevated profit margins, rapid earnings per share (EPS) growth, lack cutthroat competition, and are comparatively immune from regulation. Omaha's Warren E. Buffett, the billionaire head of Berkshire Hathaway, Inc., also looks for companies that have strong franchises and enjoy pricing flexibility, high ROE, high cash flow, owner-oriented management, and predictable earnings that are not natural targets of regulation. Like Price, Buffett has profited enormously through his investments.

To apply Price's and Buffett's investment criteria successfully, business managers and investors must be sensitive to fundamental economic and demographic trends. Perhaps the most obvious of these is the aging of the population. Health-care demands will continue to soar. In recognition of this fact, investors have bid up the shares of companies offering prescription drugs, health care, and health-care cost containment (e.g., home health agencies). Perhaps less obvious is that an aging and increasingly wealthy population will save growing amounts for their children's education and retirement. This bodes well for mutual fund operators, insurance companies, and other firms that offer distinctive financial services.

As the overall population continues to enjoy growing income, spending on leisure activities is apt to grow; companies that offer distinctive goods and services in this area will do well. Helping well-heeled customers have fun has always been a good business. Productivity enhancement to combat economic stagnation is also likely to be a major thrust during the coming decade. In this area, it is perhaps easier to pick likely beneficiaries of emerging technologies than it is to chart the future course of technical advance. For example, catalog retailers, long-distance and cellular phone companies, and credit card providers are all major beneficiaries of the rapid pace of advance in computer and information technology. Similarly, major broadcasters, cable TV companies, movie makers, and software providers are all prone to benefit from increasingly user-friendly technology for leisure-time activities.

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1. The American Express Company, Coca-Cola, Procter & Gamble, and Wells Fargo are well-known examples of major common stock holdings of Warren Buffett's Berkshire Hathaway, Inc. Each of Berkshire's major holdings are large capital-intensive companies with long operating histories of above-average rates of return. Like any really good business, they display a wise use of assets as indicated by an average ROE that is well above typical norms. Enhancing the attractiveness of these companies is the fact that they also display above-average annual rates of growth in stockholders’ equity. Thus, they can all be described as beneficiaries of high-margin growth. As is often the case, attractive financial and operating statistics reflect essentially attractive economic characteristics of each company.

The American Express Company is a premier travel and financial services firm that is strategically positioned to benefit from aging baby boomers. The Coca-Cola Company, one of Berkshire's biggest and most successful holdings, typifies the concept of a wonderful business. Coca-Cola enjoys perhaps the world's strongest franchise, owner-oriented management, and both predictable and growing returns. Also, the company is not subject to price or profit regulation. From the standpoint of being a wonderful business, Coca-Cola is clearly the "real thing." Newspapers, banks, and cable TV companies, such as The Washington Post Company and Wells Fargo & Company, translate immense economies of scale in production into dominating competitive advantages. They also fit Buffett's criteria for wonderful businesses. In the case of Gillette, above-normal returns stem from unique products that are designed and executed by extraordinarily capable management.

The late T. Rowe Price was prone to invest in high-tech companies that produced distinctive products. On the other hand, Buffett is fond of saying that he doesn’t “understand” high-tech and doesn’t want to be blown out of business by a few guys “working in a garage somewhere.” Of course, Buffett’s thinly-veiled reference to Hewlett-Packard and the Silicon Valley revolution that was started by “two guys in a simple garage” means that Buffett clearly does understand the problems of investing in hard-to-project high-tech companies. Thus, while Buffett avoids high-tech stocks, T. Rowe Price, if he were alive today, might find compelling the advantages of high-tech companies such as Microsoft, Intel, and Cisco Systems, among others.

1. Above-normal returns from investing in wonderful businesses are only possible to the extent that such advantages are not fully recognized by other investors. In the case of T. Rowe Price, early investments in Avon Products, Xerox, and IBM generated fantastic returns because Price saw their awesome potential far in advance of other investors. On the other hand, Buffett has profited by taking major positions in wonderful companies that suffer from some significant, but curable, malady. In 1991, for example, Buffett made a large investment in American Express when the company suffered unexpected credit card and real estate loan losses. When the company absorbed these losses without any lasting damage to its intrinsic profit-making ability, its stock price soared and Buffett cleaned up. Companies that are conservatively financed enjoy a similar ability

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to profit when an unexpected business downturn causes financially distressed rivals to sell valuable assets at bargain-basement prices.

Therefore, while above-average stock-market returns provide the clearest evidence of having picked good businesses for investment, short-term results can be disappointingly average or below-average if the virtues of these good businesses are clearly recognized in the marketplace. More frustrating still is the problem of finding and investing in good businesses at attractive prices and then having to wait while conventional wisdom comes around to recognizing them as such. The overall stock market is extremely efficient at ferreting out bargains and adjusting prices so that subsequent investors earn only a risk-adjusted normal rate of return. For individual investors seeking above-average returns, finding good businesses is a necessary first step, but they must also be incorrectly priced (too cheap). Buffett succeeds because he is unusually adept at finding high-quality bargains.