

GLOBAL  
EDITION



# Managerial Economics

*Economic Tools for Today's Decision Makers*

SEVENTH EDITION

Paul Keat • Philip Young • Stephen Erfle



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# MANAGERIAL ECONOMICS

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Economic Tools for Today's  
Decision Makers

Paul G. Keat

*Thunderbird School of Global Management*

Philip K. Y. Young

*Nth Degree Systems, Inc. and Duke Corporate Education*

Stephen E. Erfle

*Dickinson College*

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*To my wife, Sheilah, our children, Diana and Andrew, and our seven grandchildren—P. G. K.*

*To my grandchildren, Hayden and Emerson—P. K. Y. Y.*

*To my children, David, Kate, and Vera—S. E. E.*



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# Preface

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One day after class, a student in one of our courses commented on the managerial economics text then being used: “This book is very dry. What it needs is a plot!” To a large extent, the idea for this text stemmed from this remark. This is a text that we believe will excite readers about managerial economics as well as inform them about this vital part of management education. Each chapter begins with a Situation, in which managers in a fictional company, Global Foods, Inc., must make certain key decisions about their products in the beverage industry. After the relevant economic concepts or tools of analysis are presented, each chapter ends with a Solution, a suggested way in which these concepts or tools can be used to help managers make the best decision.

We are well aware of the reputation that economics courses have among some business students, that they are “too theoretical and not practical enough for the real world.” In our opinion, nothing could be further from the truth. We know that the instructors in managerial economics will agree with us on this matter. We hope that this text will serve as a solid supplement to their classroom efforts to demonstrate to their students the importance and utility of economic theory for business decision making.


This text is designed for upper-level undergraduate and first-year MBA courses in managerial economics and applied economics. The first two chapters form a general introduction to economics and economic reasoning. A review of the mathematical concepts and tools used in the text has been placed on the Companion Website. In addition to discussing the applications of economic theory to the firm, our text (as is the custom with all texts in managerial economics) includes chapters on various tools of analysis that are helpful to business decision makers but that are not part of the core of traditional microeconomic theory. These are demand, production, and cost estimation using regression analysis, forecasting, capital budgeting, and risk analysis. A discussion of linear programming is also available online, along with a review of the time value of money.

## IMPROVEMENTS IN THE SEVENTH EDITION

As in all our previous editions, this edition’s changes are based on our classroom teaching, consulting engagements, and corporate education seminars. In addition, we have received a number of useful suggestions from the reviewers of our sixth edition.

In this seventh edition, we welcome co-author, Stephen Erfle of Dickinson College. Steve has been of particular help in revising and improving the quantitative sections of our text. He has also provided a major addition: the use of Excel in the presentation of many of the numerical and graphical illustrations presented throughout the text.

Here are noteworthy additions, improvements, and enhancements to this edition:

- We developed Excel Applications (Excel Apps) for a number of the numerical and graphical illustrations used throughout the text. These apps, noted with the icon,  are available to readers on our website and an index delineating what is in each Excel App is provided on the inside rear cover of the text. They allow readers to turn the static figures and tables in the text into dynamic illustrations, and they will also strengthen students’ ability to use Excel, which we believe is a critical skill in today’s job market.

- We have developed a series of regression Excel Apps that provide readers with a more detailed discussion of many of the topics in regression analysis touched on in Chapter 5. See the Excel Apps listing on the back cover for additional information about coverage about regression topics in various chapters.
- We have completely rewritten Chapter 11, “Game Theory and Asymmetric Information.” User feedback requested more in-depth coverage of this challenging topic. The chapter now includes increased coverage of game theory and bargaining as well as a more in-depth discussion of adverse selection and moral hazard.
- Chapter 15, “The Global Soft Drink Industry,” is an entirely new chapter. Throughout the text, we try to show how the economic concepts and tools of analysis can be applied to the beverage industry by introducing in each chapter a Situation and a Solution for our hypothetical company called Global Foods. In our concluding chapter, we discuss how the basic concepts of supply and demand can be applied to the real global soft drink industry. This chapter was written especially for this edition by a seasoned industry consultant, Farshad Sarmad. Using current industry data and his own experiences, Farshad shows how the factors affecting supply and demand can be applied to various segments of the soft drink industry in countries around the world.
- Significant developments in information and communications technology (e.g., cloud computing, social media, and Internet commerce) have enabled businesses to store massive amounts of data generated in digital format. We introduce readers to these developments in Chapter 5, “Demand Estimation and Forecasting.” We asked Dr. Mukal Patki, a business analytics specialist at PayPal, to help us with this task. In Appendix 5B, “Understanding Consumer Behavior Through Testing,” he talks about how “big data” has enabled companies to conduct in-depth studies of consumer behavior using a technique called “test and learn.”
- In Chapter 14, “Government and Industry: Challenges and Opportunities for Today’s Manager,” we have added a discussion of patent laws and the concept of protecting intellectual property (IP), such as trademarks and copyrights. These are significant ways that government affects commerce in a free market economy. This section was written by Riyaon Harding, an expert in the commercialization of IP at IBM, a company that is recognized throughout the world for the number of new patents it receives from the U.S. government every year.
- To give readers a better idea of how managerial economics can be applied in some of the BRIC countries (Brazil, Russia, India, and China), we asked Navin Punjabi, a professor of business in Mumbai, to discuss some of the challenges of doing business in India (Chapter 13). We also asked Lisa Vortsman, a product manager for the dressings category in an actual “Global Foods” company (Lisa requested that her company not be identified) to talk about the challenges of increasing the demand for this category in countries like Russia and Brazil.
- We have also received the help of outside experts to improve our discussions about other topics of importance and current interest in business. F. John Mathis, Professor of Global Economics and Finance, has written a highly informative summary of the causes and consequences of the 2008 financial crisis (Chapter 14). To provide our readers with a better idea of the actual challenges of initiating and implementing a supply chain management system, we interviewed Steve Martson. Steve, a recently retired executive who has led supply chain systems implementation in companies such as Dell and IBM, talks about some of his experiences working in this very important field (Appendix 7C).

As we have done in all of our previous editions, we have updated our examples wherever appropriate. We have kept some of the examples that we first introduced in our previous editions if we believe they serve as good teaching illustrations, regardless of when they occurred.

## FEATURES





### The Case of Global Foods

This case, which runs throughout the entire text, helps to integrate and apply the key concepts presented in each chapter with an everyday consumer product: soft drinks and other nonalcoholic beverages. Each chapter's Situation and Solution are based on actual challenges faced by companies in the beverage industry. The stories told in each case are intended to stimulate reader interest by bringing the concepts and tools of analysis to life, which are presented in the graphs and numerical examples.

### Global Applications

The Global Applications sections exemplify how the concepts and tools of analysis can be applied in other countries. In this edition, more examples, both in the Global Application sections and in the main body of the chapter, are drawn from world growth markets such as China, India, Brazil, and Russia.

### In-Text Icons

References to the Mathematical Appendix are noted by the symbol  and references to the appendix about the Time Value of Money are noted by the symbol . As explained on the inside front cover, there are now two types of Excel icons. References to Excel exercise modules are noted by  and a listing of Excel modules is provided on the inside front cover. References to Excel Apps are noted by  and a list of Excel Apps is provided on the inside rear cover.


### Learning Objectives

Each chapter begins with a list of Learning Objectives, which outline the concepts students should be able to take away once they've read the chapter. These Learning Objectives frame the tools that future managers need to know to succeed.

## ANCILLARY MATERIALS

### Companion Website ([www.pearsonglobaleditions.com/keat](http://www.pearsonglobaleditions.com/keat))

The website contains Internet exercises, activities, and resources related specifically for *Managerial Economics: Economic Tools for Today's Decision Makers*.

A number of other resources are available on the Companion Website such as the Mathematical Appendix, Time Value of Money Appendix, and Excel exercise modules. The modules provide students with templates of the economic models in the text. In this edition, we have introduced a new feature for our Companion Website: Excel Apps . A listing of Excel Apps is provided on the inside back cover. The Excel Apps provide students with instructions to build their own models. In so doing, they gain a deeper understanding of the underlying assumptions of the models themselves.

**Business Simulation:** New to the seventh edition is an online, computer-based business simulation available on the text's Companion Website. In this simulation, a student becomes the product manager of 'alpha', a consumer product similar to bottled water or soft drinks. The student has the choice of being a low-price competitor (e.g., a private-label bottled water) or a premium-price competitor (e.g., Evian or San Pellegrino). The student competes against two computer-generated companies. One is a low-price competitor; the other is a premium-priced competitor. Students make decisions on price, marketing, process development (to lower costs), and production capacity. By making these decisions and getting the results, students learn in a dynamic and engaging way

about the concepts of price and marketing elasticities and the interdependency of pricing in oligopolistic markets.

**Online Study Guide:** The Online Study Guide offers students another opportunity to sharpen their problem-solving skills and to assess their understanding of the text material. The Online Study Guide grades each question submitted by the student, provides immediate feedback for correct and incorrect answers, and allows students to e-mail results to up to four e-mail addresses.

### Instructor's Resource Center

This password-protected site is accessible from [www.pearsonglobaleditions.com/keat](http://www.pearsonglobaleditions.com/keat) and hosts all of the resources listed below. Instructors may click on the Resources link to access files or may contact their sales representative for additional information.

**Online Instructor's Manual:** This manual, written by the textbook authors, contains all answers to the questions and problems found in the text.

**Online Test Item File and TestGen:** Written by James Holcomb of the University of Texas, El Paso, and available to instructors in test generator software (TestGen with Quizmaster), this test bank contains multiple-choice questions and a set of analytical questions for use in testing students on the material presented in each chapter of the text. Answers are also provided. TestGen's graphical interface enables instructors to view, edit, and add questions; transfer questions to tests; and print different forms of tests. Instructors also have the option of reformatting tests with fonts and styles, margins, and headers and footers, as in any word-processing document. Search and sort features let the instructor quickly locate questions and arrange them quickly in a preferred order. Quizmaster can work with your school's computer network to automatically grade the exams, store the results electronically, and allow the instructor to view and print a variety of reports.

**Online PowerPoint Presentation:** This lecture presentation tool, prepared by Gary F. Wilkinson of Indiana Wesleyan University, offers outlines and summaries of important text material, tables and graphs, and additional examples. The package allows instructors to make full-color, professional-looking presentations and custom handouts for students.

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Contributors:

E. Abdulgaffar Agaoglu, Yeditepe University  
Fred Ku, Chinese University in Hong Kong  
Nurul Shahnaz Binti Ahmad Mah, University Malaya  
Andrew Yuen, Chinese University in Hong Kong

Reviewers:

Takemi Fujikawa, Universiti Sains Malaysia  
Joe Salloum, Sagesse University  
Bassim Shebeb, University of Bahrain  
Susheng Wang, Hong Kong University of Science and Technology  
Wen Zhou, Hong Kong University





# About the Authors

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**Paul G. Keat** has been a member of the Global Business Faculty at Thunderbird School of Global Management for the past twenty-five years. At present he is an Associate Professor Emeritus. Prior to his coming to Thunderbird, he was associated for many years with the International Business Machines Corporation in professional and managerial capacities.

His education includes a B.B.A. in accounting from the Baruch School of the City University of New York, an M.A. from Washington University, and an M.A. and Ph.D. in economics from the University of Chicago.

Dr. Keat began his IBM career in the department of economic research and then moved into the long-range planning area. Later, as a member of the finance function, he spent several years at IBM's European headquarters in Paris, as manager in the financial planning area and then as the financial manager for the company's European software business. After his return to the United States, Dr. Keat served as manager in the pricing area of one of the company's manufacturing groups. Before leaving IBM in 1987, he was associated with the company's International Finance, Planning and Administration School (IFPA), where he taught managerial economics, lectured on finance in a number of company-related courses, and managed academic courses. He also taught at IBM's IFPA School at La Hulpe, Belgium.

Dr. Keat has taught at several U.S. universities, including Washington University, the City University of New York (CUNY), and Iona College. He was an adjunct professor of finance at the Lubin Graduate School of Business at Pace University, and he also taught in Pace University's Executive MBA program.

**Philip K. Y. Young** ([www.philipkyoung.com](http://www.philipkyoung.com)) is the founder and president of Nth Degree Systems, Inc., a consulting firm that provides customized education and training programs to major corporations around the world. He recently co-founded Learning Burst Academy ([www.learningbursts.com](http://www.learningbursts.com)), a company that produces courses in business education in an innovative, digital format. He is also a member of the global faculty network of Duke Corporate Education. He has thirty years of teaching experience as a professor of economics in MBA programs and over twenty-five years of experience developing and teaching customized education and training programs.

Most of Dr. Young's teaching career was spent in the Lubin School of Business at Pace University in New York, followed by several years as clinical professor of management at Thunderbird School of Global Management. His list of clients includes a number of multinational corporations in industries such as information technology, telecommunications, fast-moving packaged consumer goods, consulting services, advertising and public relations, pharmaceuticals, semiconductor manufacturing and design, diversified manufacturing, and financial services. He teaches for these companies in the United States, Latin America, western and central Europe, Asia, and the Middle East.

Dr. Young received a B.A. from the University of Hawaii, a master's degree in international relations from Columbia University, and a Ph.D. in economics from New York University.

**Stephen E. Erfle** began his career as a managerial economist during a 1994–1995 sabbatical at Seagram Classics Wine Company (SCWC). During those fourteen months, he maintained offices at Sterling Vineyards and at Mumm Cuvée Napa, where, respectively, the finance and marketing departments of SCWC resided. Trained as a microeconomic theorist, he began to use his economist’s toolkit to analyze concrete business questions, such as, Should Mumm raise the price of Brut Prestige a dollar a bottle? When does it make sense to have another tasting room associate on the floor in Sterling’s tasting room?

On returning to Dickinson College, Dr. Erfle decided to refocus his teaching in a more applied direction. He helped found the International Business and Management department and major during the late 1990s. One of the core courses in that major is his course, Managerial Economics, which uses Excel as a teaching platform. This course is modeled after what he did during his SCWC sabbatical. In the past fifteen years, he has taught more than a thousand undergraduates how to build economic models in order to do comparative statics analysis and how to do regression modeling in Excel.

Dr. Erfle received a B.S. in mathematics and B.A. in economics from the University of California, Davis, and a master’s and Ph.D. in economics from Harvard University. He has also taught in the Economics Department at Dickinson College and in the School of Social Sciences at the University of California, Irvine. He is also involved in wine education; he has taught wine-tasting classes and conducted wine tastings since his graduate school days as the resident economics and wine tutor for Harvard’s Leverett House.

# Introduction

## Learning Objectives

Upon completion of this chapter, readers should be able to:

- Define managerial economics and discuss briefly its relationship to microeconomics and other related fields of study such as finance, marketing, and statistics.
- Cite the important types of decisions that managers must make concerning the allocation of a company's scarce resources.
- Provide specific examples of how changes in customers, competition, and technology can affect the ability of a company to earn an acceptable return on its owners' investments.
- Cite and compare the three basic economic questions from the standpoint of both a country and a company.

## The Situation

The last of the color slides was barely off the screen when Bob Burns, the CEO of Global Foods, Inc., turned to his board of directors to raise the question that he had been waiting all week to ask. "Well, ladies and gentlemen, are you with me in this new venture? Is it a 'go'? Shall we get into the soft drink business?"

"It's not that easy, Bob. We need some time to think it over. You're asking us to endorse a very major *decision*, one that will have a long-term impact on the direction of the company."

"I appreciate your wish to deliberate further, Dr. Breakstone," Bob responded, "but I would like to reach a decision today. As the president of a major university, you have been especially valuable in advising this company in matters relating to social and governmental policies. But we must diversify our business very soon in order to maintain the steady growth in profits that we have achieved in recent years. As my presentation showed, the manufacturing and marketing of our own brand of soft drink is one of the best ways to do this. It represents a significant diversification, yet it is very closely related to our core business: food.

"The *economics* of the soft drink market tell us that we would be foolish to pass up the kind of *investment return* that the market offers to those newcomers willing to take the *risk*. The food business is generally a mature one. On the other hand, our *forecast* indicates that there is still a lot of room for growth in the soft drink market. To be sure, there is a tremendous amount of *competition* from the 'red team' and the 'blue team.' But we already have expertise in the food business, and it should carry over into the beverage market."

"That's just it, Bob," interjected another board member. "Are we prepared to take this risk? You yourself acknowledged that the *market power* wielded by the two dominant companies in this business is not to be taken lightly. Others have tried to take market share from them and have failed miserably. Moreover, the projections that you have shown for a growing soft drink market are based on the *assumption* that the growth rate will remain the same as it has been in the past ten years or so. As we all know, the soft drink market has been growing, but it has also been very fickle. Only recently, Americans were on a health kick, and fruit juices and bottled waters along with health foods were in fashion. Now it seems that soft drinks are back in style again.

(continued)

(continued)

Who knows what people will want in the future? Maybe we'll all go back to drinking five cups of coffee a day. And what about all the money that we're going to have to spend up front to *differentiate* our product? As you well know, in the processed-food business, establishing brand recognition—not to mention brand loyalty—can be extremely difficult and costly.”

“Well, ladies and gentlemen, all your concerns are certainly legitimate ones, and believe me, I have given much thought to these drawbacks. This is one of the biggest decisions that I will have made since becoming CEO. My staff has spent hundreds of hours analyzing all available data to arrive at a judgment. Our findings indicate a strong probability of earning an above-average return on an investment in the soft drink business, a return commensurate with the kind of risk we know exists in that market. But if we could make all our decisions with 100 percent certainty simply by feeding numbers into a computer, we'd all be out of a job. To be sure, details on production, cost, pricing, distribution, advertising, financing, and organizational structure remain to be ironed out. However, if we wait until all these details are worked out, we may be missing a window of opportunity that might not appear again in this market for a long time. I say that we should go ahead with this project as soon as possible. And unanimity among the board members will give me greater confidence in this endeavor.”

## INTRODUCTION: ECONOMICS AND MANAGERIAL DECISION MAKING

Managerial Economics is one of the most important and useful courses in your curriculum of studies. It will provide you with a foundation for studying other courses in finance, marketing, operations research, and managerial accounting. It will also provide you with a theoretical framework for tying together courses in the entire curriculum so you can have a cross-functional view of your studies.

**Economics** is “the study of the behavior of human beings in producing, distributing and consuming material goods and services in a world of scarce resources.”<sup>1</sup> *Management* is the discipline of organizing and allocating a firm's scarce resources to achieve its desired objectives.<sup>2</sup> These two definitions clearly point to the relationship between economics and managerial decision making. In fact, we can combine these two terms and define **managerial economics** as the use of economic analysis to make business decisions involving the best use of an organization's scarce resources.

Joel Dean, author of the first managerial economics textbook, defines managerial economics as “the use of economic analysis in the formulation of business policies.” He also notes a “big gap between the problems of logic that intrigue economic theorists and the problems of policy that plague practical management [which] needs to be bridged in order to give executives access to the practical contributions that economic thinking can make to top-management policies.”<sup>3</sup>

William Baumol, a highly respected economist and industry consultant, stated that an economist can use his or her ability to build theoretical models and apply them to any business problem, no matter how complex, break it down into essential components, and describe the relationship among the components, thereby facilitating a systematic search for an optimal solution. In his extensive experience as a consultant to both industry and government, he found that every problem that he worked on was

<sup>1</sup>Campbell McConnell, *Economics*, New York: McGraw-Hill, 1993, p. 1.

<sup>2</sup>For books supporting this definition, see Peter Drucker, *Management*, New York: Harper & Row, 1973.

<sup>3</sup>Joel Dean, *Managerial Economics*, Englewood Cliffs, NJ: Prentice-Hall, 1951, p. vii.

helped in some way by “the method of reasoning involved in the derivation of some economic theorem.”<sup>4</sup>

William H. Meckling, the former dean of the Graduate School of Management at the University of Rochester, expressed a similar sentiment in an interview conducted by *The Wall Street Journal*. In his view, “economics is a discipline that can help students solve the sort of problems they meet within the firm.” Recalling his experience as the director of naval warfare analysis at the Center for Naval Analysis and as an economic analyst at the Rand Corporation, one of the nation’s most prominent think tanks, Meckling stated that these institutions are “dominated by physical scientist types, really brilliant people.” However, he went on to say that “the economists knew how to structure the problems . . . the rest of the people knew a lot about technical things but they had never thought about how you structure big issues.”<sup>5</sup>

As it has evolved in undergraduate and graduate programs over the past half century, managerial economics is essentially a course in applied microeconomics that includes selected quantitative techniques common to other disciplines such as linear programming (management science), regression analysis (statistics, econometrics, and management science), capital budgeting (finance), and cost analysis (managerial and cost accounting). From our perspective as economists, we see that many disciplines in business studies have drawn from the core of microeconomics for concepts and theoretical support. For example, the economic analysis of demand and price elasticity can be found in most marketing texts. The division of markets into four types—perfect competition, pure monopoly, monopolistic competition, and oligopoly—is generally the basis for the analysis of the competitive environment presented in books on corporate strategy and marketing strategy.<sup>6</sup>

There are a number of other examples to be found. The economic concept of opportunity cost serves as the foundation for the analysis of relevant cost in managerial accounting and for the use of the “hurdle rate”<sup>7</sup> in finance. As shown in Chapter 2, opportunity cost also plays an important part in understanding how firms create “economic value” for their shareholders. Finally, in recent years, certain authors have linked their managerial economics texts thematically with strategy and human resources.<sup>8</sup> Figure 1.1 illustrates our view that managerial economics is closely linked with many other disciplines in a business curriculum.

Our approach in this text is to show linkages of economics with other business functions, while maintaining a focus on the heart of managerial economics—the microeconomic theory of the behavior of consumers and firms in competitive markets. When clearly understood and exemplified in actual business examples, this theory provides managers with a basic framework for making key business decisions about the allocation of their firm’s scarce resources. In making these decisions, managers must essentially deal with the following questions listed in abridged form:

1. What are the economic conditions in a particular market in which we are or could be competing? In particular:
  - a. Market structure?
  - b. Supply and demand conditions?

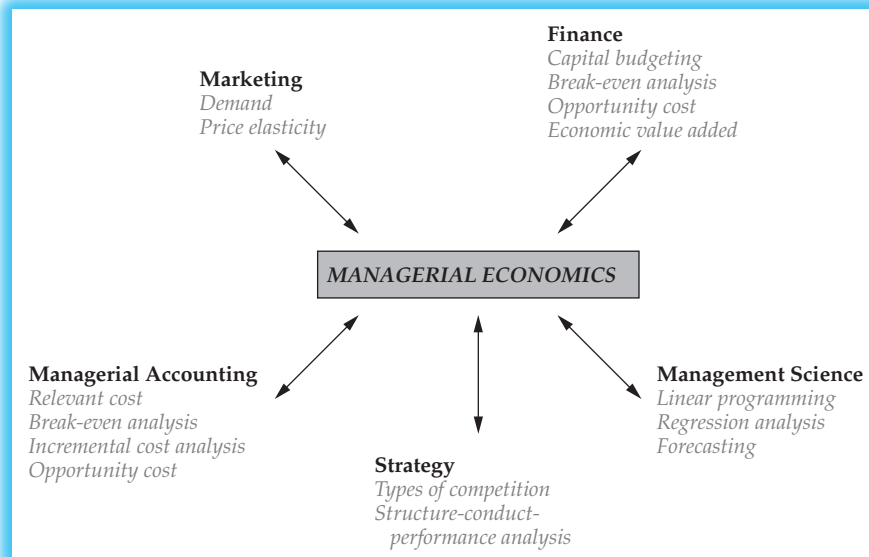
<sup>4</sup>William Baumol, “What Can Economic Theory Contribute to Managerial Economics?” *American Economic Review*, 51, 2 (May 1961), p. 114.

<sup>5</sup>“Economics Has Much to Teach the Businessman,” *Wall Street Journal*, May 3, 1983.

<sup>6</sup>Professor Michael Porter, whose books on strategy have greatly influenced this field of study, is himself a Ph.D. in economics.

<sup>7</sup>Essentially, this is a company’s cost of funds expressed as a percentage (e.g., 15 percent). Any project funded by the company should have a rate of return that is greater than this level.

<sup>8</sup>See for example, David Besanko et al., *Economics of Strategy*, New York: John Wiley & Sons, 2009, and James A. Brickley et al., *Managerial Economics and Organizational Architecture*, New York, McGraw-Hill, 2003.



**Figure 1.1** Managerial Economics and Other Business Disciplines

- c. Technology?
- d. Government regulations?
- e. International dimensions?
- f. Future conditions?
- g. Macroeconomic factors?
2. Should our firm be in this business?
3. If so, what price and output levels should we set in order to maximize our economic profit or minimize our losses in the short run?
4. How can we organize and invest in our resources (land, labor, capital, managerial skills) in such a way that we maintain a competitive advantage over other firms in this market?
  - a. Cost leader?
  - b. Product differentiation?
  - c. Focus on market niche?
  - d. Outsourcing, alliances, mergers, acquisitions?
  - e. International dimension—regional or country focus or expansion?
5. What are the risks involved?

Perhaps the most fundamental management question is question 2, which concerns whether a firm should be in the business in which it is operating. This is the very question addressed by Bob Burns and the rest of the board of directors of Global Foods in this chapter's "The Situation" vignette.

Note that question 5 has to do with a firm's risk. Uncertainty pervades our everyday lives, especially when we are considering what may happen in the future, and uncertainty, or risk, is always present in the operations of a business. Of course, some things are fairly certain. A company that buys steel can get a price quote and be certain what it will pay for a ton. A company with temporary excess cash to invest for a short period of time can ascertain the interest rate it will earn. An investor purchasing a U.S. Treasury bill is virtually certain that he or she will be repaid in full at maturity.

However, when it comes to future impacts, few things are certain. We can define risk or uncertainty (we explain the difference between these two terms in Chapter 12) as a chance or possibility that actual future outcomes will differ from those expected today. Actually we are usually only concerned with unfavorable results. Thus we can say that risk is the possibility that the outcomes of an action will turn out to be worse than expected. Typical of the types of risk that businesses face include:

- Changes in demand and supply conditions
- Technological changes and the effect of competition
- Changes in interest rates and inflation rates
- Exchange rate changes for companies engaged in international trade
- Political risk for companies with foreign operations

You may not literally see the term *risk* in many of the chapters of this book. In some of the chapters we implicitly assume that we know the level of demand, the product price, production cost, and the economic profit resulting from operations. However, we really know that risk is present in most situations. In Chapter 12, we show how businesses attempt to quantify risk and how decisions are made under these conditions, but this is not all. Chapter 5 deals with estimating the effects of changes in the variables that determine the demand for products. It also looks at predicting future results based on past experience, assuming we have sufficient historical data. It also talks about the challenges of estimating what may happen in the future if historical data do not exist.

## A BRIEF REVIEW OF IMPORTANT ECONOMIC TERMS AND CONCEPTS

For purposes of study and teaching, economics is divided into two broad categories: microeconomics and macroeconomics. The former concerns the study of individual consumers and producers in specific markets, and the latter deals with the aggregate economy. Topics in microeconomics include supply and demand in individual markets, the pricing of specific outputs and inputs (also called factors of production, or resources), production and cost structures for individual goods and services, and the distribution of income and output in the population. Topics in macroeconomics include analysis of the gross domestic product (also referred to as “national income analysis”), unemployment, inflation, fiscal and monetary policy, and the trade and financial relationships among nations.

Microeconomics is the category that is most used in managerial economics. However, certain aspects of macroeconomics must also be included because decisions by managers of firms are influenced by their views of the current and future conditions of the macroeconomy. For example, we can well imagine that the management of a company producing capital equipment (e.g., computers, machine tools, trucks, or robotic instruments) would indeed be remiss if they did not factor into their sales forecast some consideration of the macroeconomic outlook. For these and other companies whose businesses are particularly sensitive to the business cycle, a recession would have an unfavorable effect on their sales, whereas a robust period of economic expansion would be beneficial. However, for the most part, managerial economics is based on the variables, models, and concepts that embody microeconomic theory.

As defined in the previous section, economics is the study of how choices are made regarding the use of scarce resources in the production, consumption, and distribution of goods and services. The key term is *scarce resources*. **Scarcity** can be defined as a condition in which resources are not available to satisfy all the needs and wants of a specified group of people. Although scarcity refers to the supply of a **resource**, it makes sense only in relation to the demand for the resource. For example,



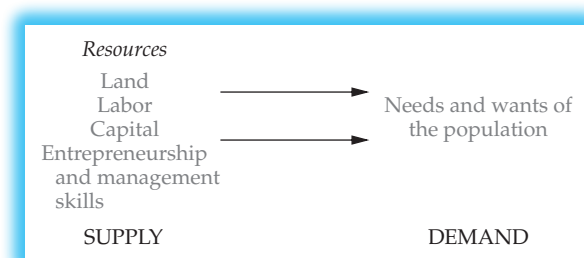
there is only one Mona Lisa. Therefore, we can safely say that the supply of this particular work of art by da Vinci is limited. Nevertheless, if for some strange reason no one wanted this magnificent work of art, then in purely economic terms it would not be considered scarce. Let us take another example: broken glass on the streets of New York City. Here we have a case of a “resource” that is not scarce not only because there is a lot of broken glass to be found, but also because nobody wants it! Now suppose there were a new art movement inspired by the use of materials retrieved from the streets of urban areas, with broken glass from the streets of New York being particularly desirable. The once-plentiful resource would fast become a “scarce” commodity.

The relative nature of scarcity is represented in Figure 1.2. As seen in Figure 1.2, the supply of resources is used to meet the demand for these resources by the population. Because the population’s needs and wants exceed the ability of the resources to satisfy all the demands, scarcity exists.

In an introductory economics course, the concept of scarcity is usually discussed in relation to an entire country and its people. For example, you will probably recall from your first course in economics the classic example of “guns” (representing a country’s devotion of resources to national defense) versus “butter” (representing the use of resources for peacetime goods and services). To be sure, scarcity is a condition with which individual consumers and producers must also deal. This text is primarily concerned with the way in which managers of the producing organizations contend with scarcity. However, before discussing this particular aspect of the problem, let us review the condition of scarcity from the perspective of an entire country.

The intent of the “guns versus butter” example is to illustrate that scarcity forces a country to choose the amounts of resources that it wants to allocate between defense and peacetime goods and services. In so doing, its people must reckon with the **opportunity cost** of their decision. This type of cost can be defined as the amount or subjective value that must be sacrificed in choosing one activity over the next best alternative. In the “guns versus butter” example, one activity involves the production of war goods and services, and the other pertains to the production of peacetime goods and services. Because of the scarcity of resources, the more that the country allocates to guns, the less it will have to produce butter, and vice versa. The opportunity cost of additional units of guns are the units of butter that the country must forgo in the resource allocation process. The opposite would apply as resources are allocated more for the production of butter than for guns.

In the presence of a limited supply relative to demand, countries must decide how to allocate their scarce resources. This decision is central to the study of economics. In fact, economics has been defined as “the science which studies human behavior as a relationship between ends and scarce means which have alternative



**Figure 1.2** Supply, Demand, and Scarcity

uses.”<sup>9</sup> Essentially, the allocation decision can be viewed as comprising three separate choices:

1. *What* goods and services should be produced and in what quantities?
2. *How* should these goods and services be produced?
3. *For whom* should these goods and services be produced?

The first question incorporates the “guns versus butter” decision. Should a country with scarce resources produce guns? Should it produce butter? If so, how much butter and how many guns? The same applies to the countless other goods and services or product groups that a country is capable of producing.

The second question involves the allocation of a country’s resources in the production of a particular good or service. Suppose a country decides to produce a certain amount of butter. What amounts of land, labor, capital, and entrepreneurial efforts should it devote to this end? Should it use more workers than machinery (a labor-intensive process), or vice versa (a capital-intensive process)?

The meaning of the third question should be readily apparent. It is a decision that must be made about the distribution of a country’s output of goods and services among the members of its population.

All countries must deal with these three basic questions because all have scarce resources. Scarcity is a more serious problem in some countries than in others, but all have needs and wants that cannot be completely met by their existing resources. Precisely how these countries go about making allocation decisions is the question to which we now turn.

There are essentially three ways a country can answer the questions of what, how, and for whom. These ways, referred to as *processes*, are as follows:

1. **Market process:** The use of supply, demand, and material incentives to answer the questions of what, how, and for whom.
2. **Command process:** The use of the government or some central authority to answer the three basic questions. (This process is sometimes referred to as the *political process*.)
3. **Traditional process:** The use of customs and traditions to answer the three basic questions.

Countries generally employ a combination of these three processes to allocate their scarce resources. The market process is predominant in the United States, although the command process plays an important role. Hence, the United States is said to have a mixed economy. Based on the levels of spending by the federal, state, and local governments, we can state that approximately one-fifth of the goods and services produced in the United States are influenced by the command process. The command process does not necessarily mean that a government literally orders the production of certain amounts of guns, butter, or other goods or services; rather, a government may use the material incentives of the market process to allocate resources in certain ways, a process often referred to as *indirect command*. For example, the government offers defense contractors the opportunity to earn a profit by producing military goods and services. In addition, the government can control the allocation of resources in a more direct way through various laws governing the actions of both consumers and producers. For example, the government controls manufacturing and distribution through such agencies as the U.S. Food and Drug Administration. It attempts to control consumer use of certain foods and drugs through various laws and regulations. A simple but important example of this pertains to the tobacco industry. Over the past several decades, the U.S. government has made determined efforts to convince people to stop smoking. These efforts range from warnings on cigarette packages to the banning of smoking on airline flights and in restaurants.

<sup>9</sup>Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, 2nd ed., London: Macmillan, 1935, p. 16.

In addition to using rules and regulations and its fiscal power, the government can also influence the allocation of scarce resources through subsidies, tariffs, and quotas. Further discussion of these aspects of the command process in the U.S. economy is found in other sections of this chapter and throughout the text. In fact, Chapter 14 is devoted to a discussion of the role of government in the market economy.

The traditional process is also at work in the U.S. economy, but this process can be better understood by considering its impact on different countries throughout the world, particularly those whose economies are still developing. Examples of the traditional process are found in the eating habits, and in the patterns of work and social interaction, in such countries. Two examples of how the traditional process influences the allocation of scarce resources are religious restrictions on certain foods, such as beef and pork, and hiring practices based primarily on familial relationships. A branch of anthropology called economic anthropology is particularly concerned with the impact of customs and traditions on the economic questions of what, how, and for whom. In the business curriculum, students will find this subject of particular importance in courses on international business.

Because of the predominance of the market process in the U.S. economy, our discussion of the allocation of scarce resources is based on the assumption that managers operate primarily through the mechanisms of supply, demand, and material incentive (i.e., the profit motive). Their decisions about what goods to produce, how they should be produced, and for whom they should be produced are essentially market oriented. That is, firms choose to produce certain goods and services because, given the demand for these products and the cost of using scarce resources, they can earn sufficient profit to justify their particular use of these resources. Moreover, they combine their scarce resources to produce maximum output in the least costly way. Finally, they supply these goods and services to those segments of the population expected to provide the most material reward for their efforts.

Table 1.1 compares the three basic questions from the standpoint of a country and from the standpoint of a company, where they form the basis of the **economic decisions for the firm**. From the firm’s point of view, question 1 is the product decision. At some particular time, a firm may decide to provide new or different goods or services or to stop providing a particular good or service. For example, consider Apple’s decision to get into the music business by offering its iPod and iTunes music download service. Another good example is the various “non-computer-service” businesses that have gotten into the market for providing cloud-computing services. For example, telecom companies such as Verizon, AT&T, Deutsche Telecom, and British Telecom (BT) all provide cloud-computing services. Even companies such as Amazon and Dell have gotten into this market.

Question 2 is a basic part of a manager’s responsibility. It involves personnel practices such as hiring and firing, as well as questions concerning the purchase of items ranging from raw materials to capital equipment. For example, the decision to automate certain clerical activities using a network of personal computers results

**Table 1.1    The Three Basic Economic Questions**

<b>From the Standpoint of a Country</b>	<b>From the Standpoint of a Company</b>
1. What goods and services should be produced?	1. The product decision
2. How should these goods and services be produced?	2. The hiring, staffing, procurement, and capital budgeting decisions
3. For whom should these goods and services be produced?	3. The market segmentation decision

in a more capital-intensive mode of production. The resolution to use more supplementary, part-time workers in place of full-time workers is another example of a management decision concerning how goods and services should be produced. A third example involves the selection of materials in the production of a certain item (e.g., the combination of steel, aluminum, and plastic used in an automobile).

The firm's decision concerning question 3 is not completely analogous to that of a country. Actually, a firm's decision regarding *market segmentation* (a term used in the marketing field) is closely related to question 1 for a country. In deciding on what segment of the market to focus, the firm is not literally deciding who gets the good or service. For example, suppose a firm decides to target a certain demographic segment by selling only a "high-end" or premium version of a product. However, the way in which a company markets the product (which includes its pricing and distribution policies) makes certain segments of the market more likely to purchase the product.

Perhaps one of the best ways to link the economic problem of making choices under conditions of scarcity with the tasks of a manager is to consider the view put forth by Professor Robert Anthony that a manager is essentially a person who is responsible for the allocation of a firm's scarce resources.<sup>10</sup>

It is interesting to note that "managers" or "management skills" was not delineated as a separate factor of production by early economic theorists. The four traditional categories of resources are land, labor, capital, and entrepreneurship. The last category can be treated as broad enough to include management, but the two classifications do involve different characteristics or skills.

The term *entrepreneurship* is generally associated with the ownership of the means of production. In addition, it implies willingness to take certain risks in the pursuit of goals (e.g., starting a new business, producing a new product, or providing a different kind of service). Management, in contrast, involves the ability to organize and administer various tasks in pursuit of certain objectives. An important part of a manager's job is to monitor and guide people in an organization. In the words of Peter Drucker, who has been called "the founding father of the science of management,"

It is "management" that determines what is needed and what has to be achieved [in an organization]. . . . Management is work. Indeed, it is the specific work of a modern society, the work that distinguishes our society from all earlier ones. . . . As work, management has its own skills, its own tools, its own techniques.<sup>11</sup>

## THE CASE OF GLOBAL FOODS, INC.: SITUATIONS AND SOLUTIONS

Prior sections of this chapter cited various reasons why an understanding of economics is important to managerial decision making. An effective way of demonstrating this importance is to cite real-world examples gleaned from the popular press and distilled from the findings of research studies on the use of economics in managerial decision making. All other texts in managerial economics do this, and this book is no exception. In addition, we want to show how economic terms and concepts can be applied

<sup>10</sup>Actually, Anthony divided the planning and control process in a firm into three activities: strategic planning (i.e., setting the firm's overall objectives), management control (i.e., making sure scarce resources are obtained and used effectively and efficiently in the firm's accomplishment of its objectives), and operational control (i.e., making sure specific tasks are carried out effectively and efficiently). These ideas were first put forth in R. N. Anthony, *Planning and Control Systems: A Framework for Analysis*, Boston: Harvard Business School, Division of Research, 1965.

<sup>11</sup>Drucker, *Management*, p. xi.

to managerial decision making through the use of a series of hypothetical situations such as the one presented at the beginning of this chapter. In fact, each chapter begins with a *situation* requiring some sort of decision or action relating directly to the subject matter of the chapter. For example, in this chapter, a decision must be made about whether to enter the soft drink market. This is a fundamental business decision involving the allocation of a firm's scarce resources, a major theme of this chapter.

At the end of each chapter, a *solution* for the situation is presented based on the knowledge gained from reading the chapter. We use the term *solution* rather loosely because it may not involve a specific answer, as one might expect in the solution to a mathematical problem. In our view, the ambiguity of a solution is very much in keeping with conditions in the real world. Often in an actual business problem, there is no unique formula that one can use to compute the answer. Either the formula does not exist or is not entirely applicable to the problem, or the problem itself is not amenable to a straightforward quantitative solution technique. Even when a specific numerical solution is achieved—as is the case in Chapter 12 on capital budgeting—there may be other considerations of a qualitative nature that temper the acceptability of the solution. Therefore, the solutions offered at the end of the chapters are only suggested outcomes of the situations. (You may want to consider alternative ways for the managers depicted in the situations to deal with their tasks or problems.)

The situations used throughout the book are based on one industry and one firm in that industry. As you have already learned, we use the soft drink industry. Moreover, we follow the trials and tribulations of the managers of Global Foods, Inc., and, in certain cases, the managers of firms that do business with Global. This helps tie together the disparate aspects of economic analysis. Also, we believe that a focus on one firm in one industry creates added interest in the events depicted in the situations, further motivating mastery of each chapter's material.

A number of industries were initially considered. We chose the soft drink industry based on the following criteria:

1. The industry should be one that all readers can relate to as consumers.
2. The goods or services sold in the industry should be essentially nontechnical, and the means of production should be relatively easy for the layperson to understand.
3. The competitive environment should be intense.
4. Information about the industry should be readily available (e.g., from trade journals and research monographs), and news about current activities in this industry should be frequently reported in the popular media.

The soft drink industry closely meets all these criteria. Just about everyone consumes this product, and the product itself is rather simple: carbonated water, sweeteners, and various flavorings. The packaging is also uncomplicated. Soft drinks are sold today in 12-ounce aluminum cans, in 1- and 2-liter plastic bottles, and in glass bottles (particularly in foreign countries). The making of the syrup and the bottling of the beverage involve various manufacturing processes that are relatively easy to understand. The two most important trade publications in the soft drink industry are *Beverage World* and *Beverage Digest*. We found them to be excellent sources of background information on the industry. Moreover, the major soft drink companies are constantly reported on in major periodicals. Recent articles from these sources are cited throughout the text.

The situations used in each chapter, along with the characters portrayed at Global, are entirely fictitious. However, the features of each situation closely resemble actual business problems or circumstances that managers must often address. The verity of the issues involved in each situation is based on the authors' experiences in private industry, as well as on extensive interviews with managers from various companies

in the soft drink business. The following section gives a summary of the situations and solutions presented in the chapters. The main decisions to be made by the characters portrayed in the situations are included under the heading “Key Question.”

## SUMMARY OF THE SITUATIONS AND SOLUTIONS

### 1 INTRODUCTION

**Situation:** Bob Burns, CEO of Global Foods, Inc., asks the board of directors to approve a decision to enter the soft drink business.

**Key Question:** “Should we enter the soft drink business?”

**Solution:** The board approves the decision, and Global Foods enters the soft drink business.

### 2 THE FIRM AND ITS GOALS

**Situation:** In an effort to increase the company’s revenues, Bob Burns considers entry into the market for energy drinks, a segment of the beverage market that has grown rapidly in recent years.

**Key Question:** “How can we improve the value of our company when the Wall Street analysts are judging us primarily on our ability to grow our revenue and profit?”

**Solution:** Bob decides to take Global Foods into the energy drink business.

### 3 SUPPLY AND DEMAND

**Situation:** Bob Burns, CEO, and Nicole Goodman, vice president of marketing, consider developing and launching a product line of gourmet tea.

**Key Question:** “What are the current and future supply and demand conditions in the consumer market for premium and specialty tea?”

**Solution:** Anecdotal information and a survey of articles in trade journals and business periodicals indicate that tea could be the next “big thing” in the U.S. beverage industry. However, Bob is not completely convinced and asks Nicole to do further quantitative analysis of the supply and demand for tea.

### 4 DEMAND ELASTICITY

**Situation:** Henry Caulfield, the proprietor of a Gas ’n Go convenience store, must evaluate the desirability of various pricing schedules for soft drinks set by the major beverage companies.

**Key Question:** “For what price should I sell this new soft drink?”

**Solution:** He decides that the relative inelasticity of the products in question makes it difficult to increase sales by lowering the price.

### 5 DEMAND ESTIMATION AND FORECASTING

**Situation:** Frank Robinson, newly appointed head of Global’s forecasting department, is asked to estimate the next year’s sales of Citronade, the company’s lemon-lime soda.

**Key Question:** “What will next year’s sales for Citronade be?”

**Solution:** Frank uses a trend analysis, adjusted seasonally as well as cyclically, to forecast the coming year’s sales.

### 6 THE THEORY AND ESTIMATION OF PRODUCTION

**Situation:** Christopher Lim, production manager, is concerned about the best way to bottle the water that the company now intends to sell. To differentiate Global Foods’



product in a highly competitive market, the marketing people want to use glass bottles. In Chris's view, this may help in the marketing of the product, but may well increase production costs significantly.

**Key Question:** "Should we package the water in glass bottles?"

**Solution:** Chris recommends that plastic bottles should be used to package both the carbonated soft drink and the bottled water products.

## 7 THE THEORY AND ESTIMATION OF COST

**Situation:** Shayna Soda Company, an independent bottler of Global Foods soft drinks, is looking for new ways to increase the profitability of its soda production. Adam Michaels, the plant manager, receives a marketing flyer from a new potential supplier in the next state, Lawrence Aluminum Products.

**Key Question:** "Should the company stay with its current main supplier in the next town, Kayla Containers, Inc., or switch to this new supplier?"

**Solution:** Shayna Soda Co. decides to stay with Kayla Containers, Inc., after considering all the other factors involved in the switch. Raw material costs were lower with Lawrence Aluminum, but other associated costs resulted in a net increase.

## 8 PRICING AND OUTPUT DECISIONS: PERFECT COMPETITION AND MONOPOLY

**Situation:** Frank Robinson is appointed product manager of the new energy drink product. One of his first tasks is to recommend a price for the product.

**Key Question:** "What price should we charge for our new product?"

**Solution:** After analyzing the demand elasticity and short-run cost structure of the product, Frank recommends a price based on the  $MR = MC$  rule.

## 9 APPENDIX B BREAK-EVEN ANALYSIS (VOLUME–COST–PROFIT)

**Situation:** Suzanne Prescott, a senior analyst for the energy drink division, is asked to prepare a profit plan for the coming year.

**Key Question:** "What is the profit outlook for the coming year for our energy drink product, Go-nuts?"

**Solution:** She uses break-even analysis to forecast the coming year's profit for this product. She also uses sensitivity analysis to provide best-case and worst-case scenarios.

## 10 PRICING AND OUTPUT DECISIONS: MONOPOLISTIC COMPETITION AND OLIGOPOLY

**Situation:** The management committee of Global Foods asks Frank to reconsider his pricing recommendation because his analysis did not take into account certain competitive and market issues.

**Key Question:** "What is the best price for a product, given its demand, cost, and competition?"

**Solution:** After much debate, the management committee, with Frank's additional help, decides to set the price of its product slightly lower than the premium-priced competitors but slightly higher than the "value brands."

## 11 SPECIAL PRICING PRACTICES

**Situation:** Rebecca James must decide what price bid she should submit to a large airport caterer that wants to award a contract to a single supplier.

**Key Question:** “How should the bid price be set to give Global Foods a good shot at obtaining the large caterer’s contract?”

**Solution:** Because demand elasticities differ in different markets, the price offered in this price-sensitive market will have to be sufficiently low to give Global a good chance of winning the contract.

## 12 GAME THEORY AND ASYMMETRIC INFORMATION

**Situation:** Henry Caulfield’s daughter, Erica, believes she can help her father better understand and anticipate the pricing reactions of his closest competitors by applying to his business some of the principles of game theory that she learned in her college business courses.

**Key Question:** “How can managers deal with dynamic business conditions in which their decisions often trigger reactions by their competitors?”

**Solution:** Although game theory can help Henry understand the underlying dynamics of his pricing tactics against his competitors, in practical terms it falls short of providing him with a definite solution about what to do.

## 13 CAPITAL BUDGETING AND RISK

**Situation:** George Kline, the manager of Global’s capital planning department, is considering a proposal for the expansion of company activities into a new geographical region.

**Key Question:** “Should we expand into a new geographical area?”

**Solution:** Using capital budgeting techniques involving the calculation of net present value and internal rate of return, George recommends that the firm accept the project. He also performs a scenario analysis to present an optimistic and a pessimistic set of results.

## 14 MANAGERIAL ECONOMICS IN A GLOBAL ENVIRONMENT

**Situation:** Global Foods is interested in building a plant in Central Europe, where costs are lower than in Western Europe, but where productivity and quality are not as good as any country in which it operates around the world. George Kline, manager of Global’s capital planning department, is asked to conduct a capital budgeting analysis of an existing plant in the Czech Republic.

**Key Question:** “Should Global make an investment in a plant in the Czech Republic?”

**Solution:** George calculates the NPV and IRR for both the subsidiary and for the parent company. Although the results for the subsidiary are favorable, the NPV for the parent is negative. He therefore recommends that the company should not make the investment at this time.

## 15 THE ROLE OF GOVERNMENT IN THE MARKET ECONOMY

**Situation:** Because of growing concern about the move by NYC to limit the size of servings of carbonated soft drinks as well as the growing trend among consumers for healthier foods and beverages, Bob considers shifting the company into healthier foods and beverages.

**Key Question:** How do we respond proactively to the changing market and legal environment?

**Solution:** The senior leadership team advises Bob not to shift its focus too quickly or too intensively on the healthy food and beverage industry. This advice is based on the recent experiences of another major global food and beverage company that tried to expand their healthier products at the expense of its core carbonated soft drink products.



## 16 MANAGERIAL ECONOMICS IN ACTION: THE GLOBAL SOFT DRINKS MARKET

All the hypothetical “situations” and “solutions” in the previous chapters are based on facts and events in the global beverage industry. In this final chapter, we forego the mixture of fact and fiction in these narratives and simply discuss the actual market conditions in today’s global beverage industry. We then show how these market conditions can be explained in terms of the key factors affecting supply and demand discussed earlier in Chapters 3 and 4.

### GLOBAL APPLICATION: THE BRIC COUNTRIES

In 2001, Jim O’Neill, chair of Goldman Sachs, came up with the acronym BRIC (Brazil, Russia, India, and China) for a paper he wrote called “The World Needs Better Economic BRICs.”<sup>12</sup> As a group the BRICs make up over 40 percent of the world’s population and about one-third of the land mass. The sheer size of their populations as well as their rapid economic growth over the past decade (with the possible exception of Russia) make them obvious attractions for companies seeking new markets in which to grow. Over the past decade, the gross domestic product (GDP) growth rates of the BRIC countries have been easily over twice the rate of the United States and the other developed countries around the world, with China and India enjoying rates that have been over three times faster. Estimated data for 2011 on the GDP by country reveals the BRIC countries to be among the top ten in GDP adjusted for purchasing power.

Rank	Country	GDP (Purchasing Power Parity)	Date of Information
1	<b>European Union</b>	\$ 15,390,000,000,000	2011 est.
2	<b>United States</b>	\$ 15,040,000,000,000	2011 est.
3	<b>China</b>	\$ 11,290,000,000,000	2011 est.
4	<b>India</b>	\$ 4,463,000,000,000	2011 est.
5	<b>Japan</b>	\$ 4,389,000,000,000	2011 est.
6	<b>Germany</b>	\$ 3,085,000,000,000	2011 est.
7	<b>Russia</b>	\$ 2,380,000,000,000	2011 est.
8	<b>Brazil</b>	\$ 2,282,000,000,000	2011 est.
9	<b>United Kingdom</b>	\$ 2,250,000,000,000	2011 est.
10	<b>France</b>	\$ 2,214,000,000,000	2011 est.

Source: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html>.

Food and beverage companies have been very active in growing their businesses in the BRIC countries.<sup>13</sup> For example, Coca-Cola considers its expansion over the past decade into the BRIC markets to be a major reason for the revival of its profitability and stock price in recent years.<sup>14</sup> We will be providing more examples involving the BRIC countries in future chapters of this textbook. In fact, marketing in the BRIC countries will be a major theme in the concluding chapter.

<sup>12</sup>[http://en.wikipedia.org/wiki/Jim\\_O%27Neill\\_\(economist\)](http://en.wikipedia.org/wiki/Jim_O%27Neill_(economist))

<sup>13</sup>A useful summary of recent efforts by food and beverage companies to market health and wellness products to the BRIC countries can be found by going to: [http://www.ghy.com/wennstrom\\_AF3\\_2011.pdf](http://www.ghy.com/wennstrom_AF3_2011.pdf)

<sup>14</sup><http://www.compassintlconsulting.com/2012/01/25/qa-coca-cola-ceo-muhtar-kent/>

## The Solution

After about an hour of heated debate, Bob had a suggestion to make to the board. “Look, we’ve been discussing this to such an extent that perhaps the key arguments I made in my presentation have gotten lost or confused. Let me summarize the seven key reasons why we want to enter the soft drink business, and then let’s vote on this matter.

1. *Outlook for the industry:* Prospects for growth in the industry continue to be strong. Therefore, we can expect the demand for our products to be a part of this positive industry trend.
2. *Market size and structure:* Although the industry is dominated by Coca-Cola and Pepsi-Cola, we believe there is still room for the entry of niche marketers. A number of regional and specialty companies have emerged over the past few years, particularly those offering sparkling fruit juices. We believe we can be as successful, if not more successful, than these new entrants.
3. *Manufacturing, packaging, and distribution:* Our experience in the manufacturing of food products will give us a significant head start when we enter the soft drink business. Moreover, we do not plan to build bottling facilities from scratch. Instead, we look to purchase and consolidate existing bottling plants currently owned and operated by independent firms or by multiple franchise operations. We are also encouraged by the number of new cost-reducing technologies that have been introduced and the fact that the cost of the artificial sweetener aspartame should decline now that Monsanto’s patent has expired.
4. *Transportation and distribution:* We already have a well-managed fleet of vehicles that deliver our food products. We also have important influence and contacts in the retail food business. These will be essential in establishing a presence on the shelves of supermarkets and convenience stores throughout the country.
5. *Pricing, advertising, and promotion:* As the ‘new kid on the block,’ we recognize that we will have to enter the market as a price follower. However, in time, as our products are developed and marketed, we should be able to establish some independence either to raise or lower our prices in comparison with the rest of the industry. As far as advertising and promotion are concerned, we have an excellent advertising agency that has served us well with our current product line. However, we shall be flexible enough to consider other agencies if the need arises. Moreover, our experience with various promotional programs (e.g., discount coupons through direct mail and magazine inserts) should be transferable to the soft drink industry. Most important, all advertising and promotional efforts should be greatly aided by the fact that our company name—Global Foods—enjoys a high degree of consumer recognition (along with the specific brand names of our products).
6. *New products:* As you have seen in the detailed report, we have exciting plans for several new products as well as a full line of naturally and artificially sweetened carbonated drinks. Through an independent market research company, we have tested consumer preferences for our new offerings. The results have been most satisfactory.
7. *Financial considerations:* As stated at the very beginning of this presentation, our main goal is to create value for our shareholders. We must continue to grow in a profitable manner if we are to continue satisfying the financial expectations of our shareholders. We compete in a mature industry that enables us to generate a considerable amount of cash from our current line of products with well-entrenched brand names. We believe that we should use this cash to expand into the soft drink business. As all our financial projections and analyses indicate, this effort should yield a rate of return that is more than enough to compensate us for the investment and its associated risk.”

After giving this executive summary, Bob Burns asked the board for a final decision. “All right, let’s vote. All those in favor of entering the soft drink market? Opposed? Great, it’s unanimous. Ladies and gentlemen, we’re going into the soft drink business.”

## SUMMARY

Managerial economics is a discipline that combines microeconomic theory with management practice. Microeconomics is the study of how choices are made to allocate scarce resources with competing uses. An important function of a manager is to decide how to allocate a firm’s scarce resources. Examples of such decisions are the selection of a firm’s products or services, the hiring of personnel, the assigning of personnel to particular functions or tasks, the purchase of materials and equipment, and the pricing of products and services. This text shows how the application of economic theory and concepts helps managers make allocation decisions that are in the best economic interests of their firms.

Throughout the text, numerous examples are cited to illustrate how economic theory and concepts can be applied to management decision making. References are also made to business cases and economic events that have been reported in the popular press. However, a unique feature of this book is a unifying case study of a food and beverage company, Global Foods, Inc. Each chapter begins with a situation in which the managers of this firm have to make key economic decisions. The solutions that end the chapters suggest ways that economic analysis can assist in the decision-making process.

## IMPORTANT CONCEPTS

**Command process.** The use of central planning and the directives of government authorities to answer the questions of *what, how, and for whom*. (p. 33)

**Economic decisions for the firm.** “What goods and services should be produced?”—the product decision. “How should these goods and services be produced?”—the hiring, staffing, and capital-budgeting decision. “For whom should these goods and services be produced?”—the market segmentation decision. (p. 34)

**Economics.** The study of how choices are made under conditions of scarcity. The basic economic problem can be defined as: “What goods and services should be produced and in what quantities?” “How should these goods and services be produced?” “For whom should these goods and services be produced?” (p. 28)

**Managerial economics.** The use of economic analysis to make business decisions involving the best use of a firm’s scarce resources. (p. 28)

**Market process.** The use of supply, demand, and material incentives to answer the questions of *what, how, and for whom*. (p. 33)

**Opportunity cost.** The amount or subjective value forgone in choosing one activity over the next best alternative. This cost must be considered whenever decisions are made under conditions of scarcity. (p. 32)

**Resources.** Also referred to as *factors of production* or *inputs*, economic analysis usually includes four basic types: land, labor, capital, and entrepreneurship. This chapter also includes managerial skills and entrepreneurship. (p. 31)

**Scarcity.** A condition that exists when resources are limited relative to the demand for their use. In the market process, the extent of this condition is reflected in the price of resources or the goods and services they produce. (p. 31)

**Traditional process.** The use of customs and traditions to answer the questions of *what, how, and for whom*. (p. 33)

## QUESTIONS

1. What do you think is the key to success in the soft drink industry? What chance do you think Global Foods has in succeeding in its new venture into the soft drink market? Explain. (Answer these questions on the basis of the information provided in the chapter and any other knowledge you might have about the food and beverage business.)
2. Discuss the importance of the command process and the traditional process in the making of management decisions. Illustrate specific ways in which managers must take these two processes into account.
3. Discuss the implications of profit for managers as entrepreneurs versus owners as entrepreneurs.
4. Explain the implications of resources, scarcity, opportunity cost, production, and market for the managerial decision-making process.
5. Compare and contrast microeconomics with macroeconomics. Although managerial economics is based primarily on microeconomics, explain why it is also important for managers to understand macroeconomics.
6. How important are the views of Robert Anthony and Peter Drucker (presented in the chapter) to understanding the science of management under the conditions of scarcity? Support your views with industrial examples.

7. Elaborate on the basic economic questions of *what*, *how*, and *for whom*. Provide specific examples of these questions with respect to the use of a *country*'s scarce resources.
8. Following are examples of typical economic decisions made by the managers of a firm. Determine whether each is an example of *what*, *how*, or *for whom*.
  - a. Should the company make its own spare parts or buy them from an outside vendor?
  - b. Should the company continue to service the equipment that it sells or ask customers to use independent repair companies?
  - c. Should a company expand its business to international markets or concentrate on the domestic market?
  - d. Should the company replace its own communications network with a "virtual private network" that is owned and operated by another company?
  - e. Should the company buy or lease the fleet of trucks that it uses to transport its products to market?
9. (Optional) Have you been personally involved in the making of a decision for a business concerning *what*, *how*, or *for whom*? If so, explain your rationale for making such decisions. Were these decisions guided by the market process, the command process, or the traditional process? Explain.

# The Firm and Its Goals

## Learning Objectives

Upon completion of this chapter, readers should be able to:

- Understand the reasons for the existence of firms and the meaning of transaction costs.
- Explain the economic goals of the firm and optimal decision making.
- Describe the meaning of the principal-agent problem.
- Distinguish between the terms profit maximization and maximization of the wealth of shareholders.
- Demonstrate the usefulness of Market Value Added<sup>®</sup> and Economic Value Added.<sup>®</sup>

## The Situation

Bob Burns looked over the last few numbers provided to him in the consultant's report on the bottled water industry, closed the binder and turned to Nicole Goodman, Global Foods' vice president of marketing. "Looking back, our decision to get into the soft drink industry was a good one, but we need to get into new products and market segments in order to support our growth strategy. Our growth in bottled water has slowed because competition continues to be tough and because consumers are starting to resist paying for high priced alternatives to tap water."

"I just happened to be reading a report from the people from *Food Science and Safety* about the growing popularity of energy drinks. They say it is a fast growing product in a key market segment: 18- to 34-year-olds. Why don't we go into this market?"<sup>1</sup>

"I hate to say this, Bob, but it may be a case of 'too little, too late,'" said Nicole. "Established brands such as Red Bull have been around for a long time and dominate this market space. Red Bull is particularly popular in Asia, which as you know is a rapidly growing region for our soft drink products."

"I'm not prepared to give up so easily, Nicole. The fact that energy drinks are popular in growth markets in Asia is all the more reason for us to consider getting into this business. And I really like the fact that this product is so popular among young people. We have good distribution channels, bottling know-how, and marketing savvy. This business is close to our core competency and it is still growing. We have told analysts that we expect double-digit growth of our top line as well as our bottom line. At our upcoming shareholder meeting, our shareholders and the analysts will be expecting to hear our plans for further business expansion. In the past, we did it with the help of soft drinks and bottled water. Now it is time to grow our entire beverage division with the help of energy drinks."

<sup>1</sup>M. A. Heckman, et al., "Energy Drinks: An Assessment of the Market Size, Consumer Demographics, Ingredients Profile, Functionality, and Regulation in the United States," *Food Science and Food Safety*, Volume 9, 2010.

## INTRODUCTION

Chapter 1 explains that managerial economics deals primarily with the problem of deciding how best to allocate a firm's scarce resources among competing uses. The best or optimal decision is the one that enables the firm to meet its desired objectives most closely. This chapter elaborates on the process of making decisions under conditions of scarcity by discussing the goals of a firm and the economic significance of the optimal decision. An online appendix explains the role of marginal analysis in economic decision making. This appendix also presents a review of the mathematics used in this text to illustrate key economic concepts and methods of analysis.

The major portion of this chapter is devoted to a discussion of the goals of the firm. However, to carry on this discussion sensibly, we must first define and explain *the firm*.

## THE FIRM

The traditional (neoclassical) theory of economics defined the **firm** as a collection of resources that is transformed into products demanded by consumers. The costs at which the firm produces are governed by the available technology, and the amount it produces and the prices at which it sells are influenced by the structure of the markets in which it operates. The difference between the revenue it receives and the costs it incurs is *profit*. It is the aim of the firm to maximize its profit.

The preceding theory assumes the existence of the firm. But this leaves the reason for its existence unanswered. Why does a firm perform certain functions internally and others through the market? It appears that the size of the firm is not determined strictly by technological considerations. Then why are some firms small and others large?

Answers to the preceding questions began to appear in 1937 when Ronald Coase postulated that a company compares costs of organizing an activity internally with the cost of using the market system for its transactions.<sup>2</sup>

If there were no costs of dealing with the outside market, a firm would be organized so all its transactions would be with the outside. However, it is incorrect to assume the marketplace does not involve any costs. In dealing through the market, the firm incurs **transaction costs**.

Transaction costs are incurred when a company enters into a contract with other entities. These costs include the original investigation to find the outside firm, followed by the cost of negotiating a contract, and later, enforcing the contract and coordinating transactions. Transaction costs are influenced by uncertainty, frequency of recurrence, and asset specificity.<sup>3</sup>

Uncertainty, the inability to know the future perfectly, increases transaction costs because it is not possible to include all contingencies in a contract, particularly a long-term contract. Frequent transactions also tend to make it necessary for explicit contracts to exist.

But probably the most important of these characteristics is asset specificity. If a buyer contracts for a specialized product with just one seller, and furthermore, if the product necessitates the use of some specialized machinery, the two parties become tied to one another. In this case, future changes in market conditions (or in production technology) may lead to **opportunistic behavior**, where one of the parties seeks to take advantage of the other. In such cases, transaction costs will be very high.

<sup>2</sup>The seminal work in this area was by Ronald H. Coase in "The Nature of the Firm," *Economica*, 4 (1937), pp. 386–405, reprinted in R. H. Coase, *The Firm, the Market and the Law*, Chicago: University of Chicago Press, 1988, pp. 33–55. Coase was awarded the Nobel Prize in Economics in 1991.

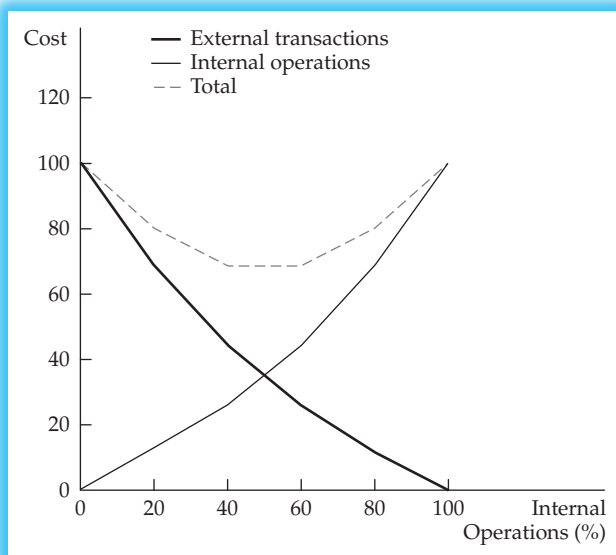
<sup>3</sup>Much of this discussion is based on Oliver E. Williamson, "Transaction-Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics*, 22 (October 1979), pp. 233–61.

When transaction costs are high, a company may choose to provide the service or product itself. However, carrying out operations internally creates its own costs. A major cost is that, in hiring workers to do the work within the firm, the firm incurs monitoring and supervision costs to ensure the work is done efficiently. Quite possibly, employees who work for a fixed wage or salary may have less incentive to work efficiently than an outside contractor.

Employers will try to decrease monitoring costs by using incentives to increase employees' output. Among such incentives are bonuses, benefits, and perquisites ("perks"). Another popular incentive is to provide workers with the possibility of stock ownership, using stock options and employee stock plans. Stock ownership is also used to attract new employees. Such employees will, of course, benefit when the company is profitable and its stock increases in value. However, incentives come with a price tag.

The trade-off between external transaction costs and the cost of internal operations can be shown on the simple graph in Figure 2.1. When a company operates at the vertical axis, all its operations are conducted with the outside. As we move to the right on this graph, the firm substitutes internal for external operations. The cost of external transactions decreases, while the cost of internal operations increases. The total cost is the vertical summation of the two costs, and it decreases at first as the company finds that internalizing some operations is efficient. However, as more of the operations are internalized, some efficiency is lost, and the total cost begins to rise again. The company will choose to allocate its resources between external transactions and internal operations so the total cost is at a minimum, which in this case will occur about midway between the two extremes.

If transaction costs for a specific product or service are higher than the costs of carrying on the activity internally, then a company benefits from performing this particular task in-house. An independent firm may not find it profitable to produce a product if only a few customers demand it. However, as markets expand, the demand for a product or service, which may have been limited in the past, now expands. This will permit new firms to specialize in activities that previously had to be performed by the firm that needed this task to be performed. Thus new companies and industries come into existence. This is true not only in the case of products, but also for services that at one time were performed by the firm itself and are now produced by



**Figure 2.1**  
Trade-off Between  
Transaction Costs and  
Internal Operating Costs



independent firms—for example, cleaning services, security services, and cafeterias are often now run by specialized firms. Another example would be the college bookstore that is operated by one of the large companies in the book industry. This idea is actually rather old. It really started with Adam Smith, who stated that “the division of labor is limited by the extent of the market.” George Stigler discussed this point in a 1951 article, and concluded that as industries expand, companies that previously had produced everything internally will tend to experience “vertical disintegration.”<sup>4</sup> What has happened, of course, is that transaction costs have decreased and that the possibility of “opportunistic behavior” has also diminished.

Although the outsourcing of peripheral, noncore activities has been around for a long time, the outsourcing of a business’s core activities is a somewhat more recent activity. In the past we have seen the outsourcing of private-label or house-brand merchandise. However, now the outsourcing of highly technical products and services is widespread. But outsourcing cannot only occur within a given country. When production of goods and services is transferred to another country, we call it offshoring. Transferring production of manufactured goods to foreign countries has been going on for a long time. Now, because of great advances in information technology and communication, offshoring of technical services, including call centers, accounting, human resources and legal services, and even engineering and research, have become quite common. The question of the benefits of offshoring has been a very controversial topic among economists and it has also become a political issue.

By transferring various services from developed economies to developing countries where costs are lower, developed economies become more competitive, which tends to increase their gross domestic product (GDP). Further, developing countries gain employment and production and this tends to increase their GDP.

However, there are some disadvantages for the developed economies: for example, a potential loss of jobs, and also the question of the quality of products and services as well as the decreased amount of control that the originating countries incur. In addition, the offshoring of technical work and knowledge may erode the developed countries’ competitive advantage.

While we read about offshoring in the press almost every day, there are some small signs of certain operations returning to the United States as well as to other developed countries, a phenomenon called reshoring. There are several reasons for this trend.

Wages in developing countries have been rising. This is particularly true of China, where wages are reported to have been rising by 15 percent per year, even though they are still quite low compared to wages in developed countries. In addition, the decrease in the value of the dollar has increased the cost of importing. Increases in energy costs have made it more expensive to ship products from faraway countries. Communications and quality control have often been instrumental in increasing costs. The lead time for orders from foreign countries is longer. Due to great improvements in technology in U.S. manufacturing, there has been a significant increase in productivity, thus making U.S. production more competitive.

However, reshoring has been quite limited so far and probably has had very little effect on employment in U.S. manufacturing. There is another facet that must be considered. While costs have been rising in some of the countries to which products and services have been offshored, there are still many countries where production has remained quite inexpensive. So, while some of the countries may be losing their

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<sup>4</sup>George J. Stigler, “The Division of Labor Is Limited by the Extent of the Market,” *Journal of Political Economy*, 59 (June 1951), pp. 185–93.



advantage, production of goods and services will shift to the still-low-cost countries rather than back to the high-wage economies.<sup>5</sup>

### Coase and the Internet

When Ronald Coase wrote his article in 1937, he and the rest of the world knew nothing about the advent of the Internet in the last years of the twentieth century. However, his contribution to economic theory turns out to have great relevance to today's business transactions over the Internet. If you should surf the Internet and type in the following keywords, "Transaction costs Coase Internet" you will get a large number of hits attesting to today's popularity of Coase's ideas.

The basic idea of the trade-off between the costs of internal operations and external transactions remains as valid as ever. But the revolutionary event that occurred in recent years is that the Internet has caused transaction costs to decrease drastically, making it easier and more efficient for companies to curtail their own operations and farm out much of the work they would have been performing to outside companies that specialize in specific operations.

As mentioned previously, transaction costs include the cost of search and investigation, contract negotiations, and coordination or enforcement. How has the Internet affected these transactions and their costs?

Search and investigation have been made significantly easier. Potential suppliers can be quickly and easily identified. Information on their reliability and credit standing is readily available, and so are evaluations of their financial conditions. "Online clearing houses . . . permit a purchaser to contract for price, quality and delivery dates with few clicks of the mouse," making contracting a much easier task. As far as coordinating costs are concerned, it is now much more simple to follow a shipment as it progresses toward its location, and to take action in real time, if this should become necessary.<sup>6</sup>

Although Coase has stated that he is not paying much attention to e-commerce, he believes that understanding transaction costs in the new economy "enables you to have more specialization and greater production, because you are more efficient. You'll get more small firms as a result, but large firms will also get larger, because they can concentrate on core activities and contract out what they can't do well."<sup>7</sup>

We end this discussion with the conclusion that a firm will trade off costs incurred in conducting transactions with the outside market with the costs of internalizing such transactions in order to minimize the combination of the two. This is consistent with the overall economic goals of the firm, the subject to which we turn next.

## THE ECONOMIC GOAL OF THE FIRM AND OPTIMAL DECISION MAKING

Every business has a goal. Most students would assert that the primary goal of a business is to earn a certain amount of profit (i.e., to "make money"), and, in fact, the economic theory of the firm—the foundation on which much of managerial economics

<sup>5</sup>Much of the material on reshoring has been obtained from the following sources: Stan Abrams, "Thoughts on the Reshoring Mini-Wave," *Business Insider*, July 6, 2011; Bob Adelmann, "ReShoring: American Manufacturing Jobs Come Home," *The New American*, October 18, 2011; Peter Marsh, "China labour costs push jobs back to US," *Financial Times*, October 6, 2011; Tom Leunig, "Stop thinking of 'reshoring' jobs from China. It just won't happen," *Financial Times (USA)*, October 31, 2011.

<sup>6</sup>This section, including the direct quotation, is based on Don Tapscott, David Ticoll, and Alex Lowy, "Internet Nirvana," *eCompany Now*, December 2000, pp. 98ff.

<sup>7</sup>Bob Tedeschi, "Coase's Ideas Flourish in the Internet Economy," *New York Times*, October 2, 2000.

rests—assumes the principal objective of a firm is to maximize its profits (or minimize its losses).<sup>8</sup> Thus, throughout this text, unless otherwise stated, we assume this same objective, known among economists as the **profit maximization hypothesis**.

To be sure, there are other goals that a firm can pursue, relating to market share, revenue growth, profit margin, return on investment, technology, customer satisfaction, and shareholder value (i.e., maximizing the price of its stock). It is crucial to be precisely aware of a firm's goals. Different goals can lead to very different managerial decisions given the same limited amount of resources. For example, if the main goal of the firm is to maximize market share rather than profit, the firm might decide to reduce its prices. If the main goal is to provide the most technologically advanced products, the firm might well decide to allocate more resources to research and development. The added research and development expenses would most likely reduce the amount of profit the firm earns in the short run but may result in increased profits over time as the company increases its technological lead over its competitors. If the main goal of the firm is to carry a complete line of products and services, it may choose to sell certain products even though they might not be earning a profit.

Given the goal (or goals) that the firm is pursuing, we can say that the **optimal decision** in managerial economics is one that brings the firm closest to this goal. For example, as you see in Chapter 8, to maximize its profit (or minimize its loss), a firm should price its product at a level where the revenue earned on the last unit of a product sold (called *marginal revenue*) is equal to the additional cost of making this last unit (called *marginal cost*). In other words, the optimal price equates the firm's marginal revenue with its marginal cost.

One additional concept should be presented in our discussion of a firm's goals. In economics, a distinction is made between the “short-run” time period and the “long-run” time period. As explained in greater detail in later sections of this text (see Chapters 3, 6, and 7), these time periods actually have nothing directly to do with calendar time. During the short run, we assume a firm can vary the amount of certain resources (e.g., labor hours) but must operate with a fixed amount of at least one of its resources (e.g., factory space). Theoretically, in the long run, a firm is able to vary the quantities of all resources being used. In this text, we look at both short-run and long-run decisions made by the firm. We assume a company's goal is to maximize profits both in the short and long run. However, it must be understood that a business will, at times, sacrifice profitability in the short run with the anticipation of maximized long-run profits.

## GOALS OTHER THAN PROFIT

### Economic Goals

The concept of profit maximization has been attacked as incomplete by many writers. They point out that companies may have other economic objectives, such as those mentioned previously.

For the time being, we omit discussion of the objective of “value” or “shareholder wealth” maximization and consider some of the other alternatives concerning a company's activity during a single period of time (such as a year). It is readily

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<sup>8</sup>As we will see in Chapter 8, a firm may lose money in the short run and still be better off than it would be if it were to shut down operations, as long as its losses are less than its fixed costs. However, if it is going to lose money, from an economic standpoint it is optimal to minimize its losses.

admitted that profit maximization is a rather vague term. How does a company know that its profits in a given period are the largest they can be? Or, more correctly (from an ex ante, or planning, viewpoint), how does a company know that the actions it is taking in this time frame will result, if all goes as expected, in the greatest possible profit?

Let us look at the objectives set out by a company's CEO (or a committee representing the company's top management). It is not unusual for the CEO or his or her representatives, having decided on the achievable results for the next fiscal period, to distribute objectives to the various operating heads at the beginning of the planning cycle. Now imagine this memorandum from the firm's CEO to the general manager of one of the company's operating units:

Dear Alex,

We have had a pretty good year in 2012, and we believe that 2013 should be even better.

I am therefore issuing the following objective for your unit in 2013. Take any and all actions that will ensure your profit is maximized.

Corporate management is confident that you will not disappoint us. We know that the objective we have given you is challenging. We also are convinced that it is achievable.

ERIC, CEO

This memorandum is obviously an extreme simplification, but what is Alex to do with his marching orders to maximize profit? What resources does he have to do this? How can his performance be measured at the end of the year? What is his maximum profit?

Now let us look at another "objective" memorandum:

Dear Alex,

We have had a pretty good year in 2012, and we expect that 2013 should be even better. We are assigning specific objectives to each of our operating units in such a way that the total result will be a financial posture consistent with our economic and industry forecasts, our available resources, and good increases in productivity. With this in mind, we want you to build your 2013 plan to correspond to the following objectives for your unit:

1. Your revenue should increase by 10 percent from 2012.
2. The profit margin of your unit should increase from 8 percent to 9 percent, and your return on assets should be 10 percent.
3. Your division will receive \$10 million of company funds for expansion projects whose minimum internal rate of return should be 12 percent.
4. The head count of your unit can increase by no more than 2 percent.

Corporate management is confident that you will not disappoint us. We know that the objective we have given you is challenging. We also are convinced that it is achievable.

ERIC, CEO

Assuming that this memorandum makes more sense (which it certainly should, for otherwise our point has been lost), does this mean that the company's objective is not really profit maximization, but rather a growth rate, a profit margin, or a return on its assets? This is what many writers on this subject say.

Such a conclusion is, however, misleading. Any of these measures in itself is incomplete, and each should be seen as a realistic target consistent with the ultimate objective of maximizing the firm's overall profits. Management, in this example, advised by its expert staff regarding the company's economic environment, competition, technological advances, and market potential, has come to the conclusion that maximum profits can be achieved by the combination of growth and profit measures included in its memorandum.

Thus, the specific objectives assigned to an operating unit are really proxies for the overall objective of profit maximization. The achievement of these proxies is also measurable at the end of the fiscal period; the division executive's performance and contribution toward the company's profits can be evaluated, and rewards in terms of bonuses or incentive plans can then be determined.

### Noneconomic Objectives

In this complex world, companies may have objectives that are not strictly economic or at least do not appear to be governed by economic thinking. Indeed, some large companies have published statements of principles that, if accepted at face value, would indicate that making profits is the last thing for which they strive. Profits may be mentioned as only one of several objectives, and they may actually be listed last. Furthermore, the statements do not mention any maximum but rather concentrate on such measures as "adequate" or "reasonable" return to stockholders. Such modesty is certainly more palatable to the public. What, then, are some of the guiding principles such companies publish?

1. Provide a good place for our employees to work.
2. Provide good products/services to our customers.
3. Act as a good citizen in our society.

These actions are costly, and at first glance may seem to interfere with profit maximization. However, consider the following: Satisfied employees not only tend to be more productive, but will remain with the company longer, thus decreasing expensive labor turnover. Without satisfied customers, a company will not remain in business. Supporting good causes, such as charitable and other nonprofit organizations, will create goodwill and ultimately potential sales. Therefore, it would be worthwhile for a company to spend resources on such **noneconomic objectives** consistent with increases in revenues and profit. If this is the case, then attaining these objectives is not incompatible with profit maximization, and indeed, these objectives could be classified as economic.

We could enlarge this discussion of so-called noneconomic objectives, but the point has been made. Today's markets and institutions constrain companies in many ways that did not exist in the past. Therefore, companies must concern themselves with creating employee and customer satisfaction and maintaining social responsibility to a much higher degree than in the past. But these considerations do not contradict the profit maximization principle. If companies were maximizers in the past, under less restrictive conditions, they are still maximizers today but have to operate within the requirements imposed by current standards and the costs that accompany them.

## DO COMPANIES REALLY TRY TO *MAXIMIZE PROFITS*?

There still remains for us to discuss a major criticism, that has been leveled at the view of profit maximization as a company's primary objective.

The argument is that today's corporations do not maximize. Instead, their aim is to "satisfice." To understand this argument, we have to consider two parts of this idea:

1. The position and power of stockholders in today's corporation
2. The position and power of professional management in today's corporation

Years ago the owner or owners of a business also managed it. Businesses were predominantly quite small and lent themselves to being operated as individual proprietorships, partnerships, or small, closely held corporations. Modern businesses, particularly medium-size or large corporations, of course, cannot be managed by the owners, who are the shareholders and number in the thousands or even hundreds of thousands. Many stockholders own only minute pieces of a corporation. Furthermore, stockholders tend to diversify their holdings; thus, they may hold small interests in many different corporations. The argument asserts that most stockholders are not well informed on how well a corporation can do and will be satisfied with an adequate dividend and some reasonable growth. Because they own different stocks, poor performance on one of their holdings may be offset by some of their other assets. The stockholder is more concerned with the portfolio of stocks than with any individual stock. Shareholders may not be capable of knowing whether corporate management is doing its best for them, and they actually may not be very concerned as long as they receive what they consider a satisfactory return on their investment—hence "**satisficing**."

Second, in a modern corporation professional managers—the chair of the board, the president, a group of vice presidents, and other high-level managers—direct the operations of a company. Although they are overseen by a board of directors (which often includes a large number of insiders), they are responsible for major decision making. It is claimed by a number of writers that managers (who commonly hold a relatively small number of shares) have their own objectives, which do not include maximization of shareholder earnings. Indeed, it is often said that managers tend to be more conservative—that is, risk averse—than stockholders would be because their jobs will most likely be safer if they turn in a competent and steady, if unspectacular, performance. They could probably benefit stockholders in the long run by taking some well-calculated risks. However, they may be too cautious to do so, and thus they miss opportunities. They fear that they may not survive the reverses that could result from risk taking. If stockholders need only be satisfied, this may be the appropriate way for management to go.

Management's interests may actually be contrary to those of stockholders. For instance, management may be more interested in revenue growth than profits. Why? It has been claimed that management remuneration tends to be a function of revenue size rather than profits. Several studies have been made on this subject, but the evidence is considerably less than overwhelming. Also, company management may be more interested in maximizing its own income, may indulge in various perquisites, and in general may not act in the best interest of the widely dispersed, somewhat disinterested and lethargic stockholder population. The divergence in the objectives between owners and management has been the subject of much discussion in economic

literature and is known as the “principal-agent” problem or simply as the “agency problem.”<sup>9</sup>

The two sides in this relationship tend to complement one another. The owners of the corporation—the stockholders—are not interested in maximization, or even if they are, they are not well informed and have too little power. The corporation’s management, whose selfish motives lead them to act in their own favor when stockholder and management goals differ, will manage in a way that serves their interest, while keeping the stockholder satisfied with adequate return and moderate growth.

Like all ideas presented by intelligent people, this one probably contains a certain amount of truth. Each of the points seems eminently reasonable and, for all we know, could be valid over limited periods of time. However, let us look at some of the realities of life and some recent events in the business world that tend to contradict this argument.

You, the reader of this book, may be among that group of far-flung stockholders owning a hundred shares in a company with millions of shares outstanding. However, particularly in the case of large corporations, much of the outstanding stock is held by institutions in professionally managed accounts. Among these are banks that manage large pension funds, insurance companies with their extensive portfolios, and mutual funds. These organizations employ expert analysts (who are only human, and therefore, at least occasionally make mistakes) who study companies and pass judgment on the quality of their management and their promise for the future. Of course, they deal mostly with stock prices, but after all, stock prices are a reflection of a company’s profitability.<sup>10</sup> These analysts make recommendations to their management on which stocks to buy and which to sell. Companies that underperform would be weeded out of these institutional portfolios, with a consequent drop in their stock prices.

Now, what happens when certain stocks tend to underperform in the market? They become targets for takeovers by others. We really do not have to belabor this point because anyone reading the business sections of daily newspapers or other business publications is very much aware of recent events in the takeover and buyout arenas. In addition to the accumulation of stock and subsequent tender offers by outside financiers, we have also witnessed the existence of proxy fights by dissident large stockholders. Thus, it appears that management in today’s corporation is not insulated from outside pressures. Management is constrained to act in agreement with stockholders, who look for increases in stock values and returns and who act to “punish” the managements of those companies that appear to underperform.

Another argument leads to a similar conclusion. Competitive pressures also act to stimulate management to performance. If a company’s results lag behind those of competitors, those lethargic stockholders who do not challenge the company directly will tend to sell its shares and turn to those companies providing better returns and better prospects of returns. The price of the company’s stock will suffer relative to prices of the others; such a scenario will not go unnoticed in financial markets.

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<sup>9</sup>A formal theory dealing with the potential conflicts between shareholders and management was developed by Michael C. Jensen and William H. Meckling in their article “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure” (*Journal of Financial Economics*, October 1976, pp. 350–60). These conflicts arise whenever managers own less than 100 percent of the stock, which is, of course, the predominant situation in today’s large corporation. To ensure managers act on behalf of the stockholder, the latter will have to incur “agency costs,” which are expenditures to monitor managers’ actions, to structure the organization in such a way as to limit management’s action, and so forth.

<sup>10</sup>The connection between profits and stock prices is examined in the next section, when we expand the maximization principle to include the wealth of stockholders.



Company management will come under the gun to improve performance, and ultimately management may be replaced because of pressure by outside board members, a successful proxy fight, or even a takeover. A very vocal and sometimes effective advocate of shareholder rights has been the California Public Employees' Retirement System (Calpers). With about \$236 billion in assets as of March 31, 2012, it has demonstrated that changes in corporate governance can be accomplished. Calpers reviews the performance of companies in its investment portfolio and selects companies that have performed poorly and for which it may seek a change in corporate governance.<sup>11</sup> Until 2010, Calpers published a "Focus List" naming companies that performed poorly. Now, instead of publishing such a list, it requests meetings with representatives of these companies to suggest specified reforms.

The Sarbanes-Oxley Act was passed in 2002 in response to a number of corporate scandals. The act sets new, stricter standards on the behavior of public corporations and accounting firms. Since then, shareholders have become much more active in proposing changes in corporate policies in proxies that are to be considered at annual stockholder meetings. Several of these reforms, such as changing the way by which directors are elected and stockholders casting nonbinding votes on executive pay, have received much greater consideration and in some cases actually were adopted.<sup>12</sup>

In addition, there is the managerial labor market. Managers who have performed well for their stockholders will most likely be in greater demand and will be better compensated than managers with mediocre records.

Management has another, more direct, motivation to act in concert with the objectives of stockholders. Parts—frequently large parts—of an executive's remuneration are tied to performance in terms of operating profits for the corporation or for units supervised by the particular executive.<sup>13</sup> Furthermore, an executive's compensation package is usually enhanced by the issuance of stock options. Because the value of stock options depends on the price of the company's stock, which in turn is a function of the company's profit performance, self-serving company managers may find that their objectives (less than miraculously) coincide with those of the stockholders.

### Profit Maximization, Restated

It is readily agreed that the existence of the profit maximization objective can never be proven conclusively. We must note, however, that lack of financial success by a company is not necessarily a contravention of the principle. The best of plans may go awry, and management's judgment certainly is not error-proof. Under certain circumstances, the aim for loss minimization may replace the goal of profit maximization, but this too supports our basic premise. As difficult as it is to point to acts of profit maximization by management, none of the alternative constructions lends itself as well as a yardstick by which to measure business activity. As long as a corporation strives to do better—that is, prefers higher profits to lower profits and lower costs to higher costs, and acts consistently in those directions—the assumption of profit maximization serves as a better basis for judging a company's decisions than any of the other purported objectives. Incidentally, this "striving to do better" can include a multitude of decisions, including those that lead to a revenue increase greater than a cost increase, a revenue decrease smaller than a cost decrease, or a constant revenue with decreased costs. All these decisions involve an increase in profits.

<sup>11</sup>Much information about Calpers can be obtained by visiting [www.calpers.org](http://www.calpers.org) or [www.calpers.ca.gov](http://www.calpers.ca.gov).

<sup>12</sup>Jena McGregor, "Activist Investors Get More Respect," *BusinessWeek*, June 11, 2007, pp. 34–35.

<sup>13</sup>The fact that these performance incentives may be tied to near-term profits can create a problem because the executive's horizon may be shortened.

However, maximizing profits in the very short term (e.g., 1 year) can always be accomplished by management. If, for instance, revenue in the coming year is expected to decline, a company can keep up its profits by cutting expenses. If management seeks to do this without an immediate further reaction on revenue, it can eliminate some development projects. The effect of a lack of new products will not be felt right away, but the shortsightedness of this management decision will come home to roost in a few years. This is the decision area in which the objective of period profit maximization can be attacked more logically. Profit maximization for one period is an incomplete measure from the viewpoint of a business organization that is expected to operate into the infinite—or at least the foreseeable—future.

## MAXIMIZING THE WEALTH OF STOCKHOLDERS

Because period profit maximization is an extremely useful way to look at day-to-day decision making in the firm, we use it as our model throughout most of this book. However, there is another view of maximization that is usually adopted in finance textbooks and that takes into consideration a stream of earnings over time. This concept includes not only the evaluation of a stream of cash flows; it also considers the all-important idea of the time value of money.<sup>14</sup> Because it is an obvious fact that a dollar earned in the future is worth less than a dollar earned today, the future streams must be discounted to the present. Both the shape of these streams through time and the interest rate at which they are discounted affect the value of the stockholders' wealth today. The discount rate in particular is affected by risk, so risk becomes another component of the valuation of the business. Financial theorists differentiate various types of risk, with the two major types commonly identified as business risk and financial risk.

**Business risk** involves variation in returns due to the ups and downs of the economy, the industry, and the firm. This is the kind of risk that attends all business organizations, although to varying degrees. Some businesses are relatively stable from period to period, whereas others incur extreme fluctuations in their financial returns. For instance, public utilities (i.e., suppliers of electricity and gas, as well as the operating telephone companies) tend to have more stable earnings over time than do industrial companies, particularly those in industries that are highly cyclical (e.g., steel, automobiles, and capital goods), or companies in high-tech fields.

**Financial risk** concerns the variation in returns that is induced by leverage. *Leverage* signifies the proportion of a company financed by debt. Given a certain degree of leverage, the earnings accruing to stockholders will fluctuate with total profits (before the deduction of interest and taxes). The higher the leverage, the greater the potential fluctuations in stockholder earnings. Thus, financial risk moves directly with a company's leverage.

How do we obtain a measure of stockholders' wealth? We do so by discounting to the present the cash streams that stockholders expect to receive out into the future. Because we know today's price of a company's stock, we can—given the expected dividends to be received by the stockholders—determine the discount rate the investment community applies to the particular stock. This discount rate includes the pure time value of money and the premiums for the two categories of risk. The dividend stream is used to represent the receipts of stockholders because that is all they really receive from the company. Of course, a stockholder also looks for a capital gain, but selling the stock at some point involves someone else buying it; thus, this

<sup>14</sup>Time value of money and discounting of cash flows is discussed in greater detail in the appendix found on the Companion Website.



payment represents only a trade, an exchange of funds. However, dividends represent the returns on the stock generated by the corporation. In equation form, we have the following:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \dots + \frac{D_n}{(1+k)^n}$$

where  $P$  = present price of stock

$D$  = dividends received per year (in year 1, year 2, . . . year  $n$ )

$k$  = discount rate applied by financial community, often referred to as cost of equity capital of a company

If it is assumed that the corporation will have an infinitely long life and dividends will remain the same year after year, then the price of each share of stock can be calculated as a perpetuity with the following formula:

$$P = D/k$$

Investors, however, will usually expect dividends to rise. In the case where dividends grow at a constant rate each year, the formula for share price becomes

$$P = D_1 / (k - g)$$

where  $D_1$  = dividend to be paid during coming year

$g$  = annual constant growth rate of dividend expressed as a percentage<sup>15</sup>

Multiplying  $P$  by the number of shares outstanding gives the total value of the company's common equity.<sup>16</sup>

A simple example will help clarify the previous equation. Assume that a company expects to pay a dividend of \$4 in the coming year, and expects dividends to grow at 5 percent each year. The rate at which stockholders discount their cash flows (which is really the rate of return stockholders require to earn from this stock) is 12 percent. There are 1 million shares outstanding. We would expect the price of each share to be

$$P = 4 / (0.12 - 0.05) = 4 / .07 = \$57.14$$

The value of the company's stock would be \$57.14 million. This is the expected market value given the variables that we have assumed. However, this may not be the maximum value the company could achieve. The variables in the equation may have to change. Because  $k$  is a function of the company's level of risk (both business and financial), the company may be able to decrease  $k$  by lowering the riskiness of its operations or by changing its leverage. It can affect  $g$  and  $D$  by retaining more or less of its earnings. By retaining a larger portion of its earnings and devoting a smaller portion of its earnings to dividends, the company may be able to increase its growth rate,  $g$ .

Thus, under this construction, maximizing the wealth of the shareholder means that a company tries to manage its business in such a way that the dividends over time paid from its earnings and the risk incurred to bring about the stream of dividends always create the highest price and thereby the maximum value for the company's stock.

This **wealth maximization** hypothesis tends to weaken even further the management versus stockholder argument. Corporate executives, for whom stock options

<sup>15</sup>The derivation of these formulas is discussed in greater detail in Chapter 12.

<sup>16</sup>The value of a company's equity can also be obtained by calculating the present value of the expected stream of "free cash flows." However, when free cash flow is correctly constructed, it is essentially equal to dividends paid. This subject is discussed at greater length in Appendix 12A when the calculation of the value of a corporation is presented.

represent a significant portion of remuneration, now have an even greater incentive to aim at results that conform to the objectives of the stockholders.

This is a rather complex if quite obvious development of the maximization principle. As stated previously, we work primarily with the profit maximization hypothesis because it is quite sufficient for most of our purposes. We return to the wealth maximization rule in Chapter 12 when we discuss a company's investment and replacement decisions involving expenditures for which the resulting payoffs flow into the corporation over a considerable period of time. In that chapter, we also briefly discuss how the market tends to determine the rate of return it requires from a company (and thus sets the discount rate  $k$ , the company's cost of capital). In Chapter 12, we also examine the question of risk and uncertainty and attempt to find ways to deal with it.

### Market Value Added and Economic Value Added

Various publications have measured the wealth of stockholders by taking the price per share quoted in the stock market pages and multiplying it by the number of shares outstanding. The product is, of course, the current value of the shares, and thus reflects the value of the company accorded to it by the market. However, such a measure does not show the wealth that has been created by the company. After all, suppose the stockholders had contributed more capital than the stock was worth currently. Then, actually, the company would have "destroyed" some of the stockholders' wealth. What is really important is how much the stockholders' investment is worth today relative to what they have contributed to the corporation in originally buying the stock and then having earnings retained by the corporation for reinvestment.

A relatively new measure has become popular with the financial community as well as with many corporations. It is called **Market Value Added (MVA<sup>®</sup>)** and has been developed by the consulting firm of Stern Stewart.<sup>17</sup> (The firm is now called EVA Dimensions, LLC.) MVA represents the difference between the market value of the company and the capital that investors have paid into the company.

The market value of the company includes the value of both equity and debt. The capital includes the book value of debt and equity on the company's balance sheet plus a number of adjustments that increase the basic number. Among these adjustments is the inclusion of research and development (R&D) expense (which accountants treat as expense). Prior years' R&D is cumulated and amortized over a number of years. Another item that is included is the amortization of goodwill. Thus, in the end, the contributed capital of the corporation will turn out to be larger than merely the book value of equity and debt. Although the market value of a corporation will always be positive, the MVA may be positive or negative, depending on whether the market value of the company is greater than the capital that investors contributed. Where a corporation's market value is less than the contributed capital, investors' wealth has actually been "destroyed."

A recent ranking of 3,000 corporations based on 2011 stock prices showed Apple at the top, with an MVA of \$423 billion, followed by Exxon (at \$222 billion), Microsoft (at \$184 billion), and IBM (at \$162 billion). At the other end of the scale were the American International Group, Citigroup, and Bank of America, which actually showed negative MVAs.<sup>18</sup>

Basically, MVA is a forward-looking measure. If market value reflects the financial markets' appraisal of a company's future cash streams, then MVA represents the

<sup>17</sup>This concept was originally introduced in 1990. See G. Bennett Stewart III, "Announcing the Stern Stewart Performance 1,000: A New Way of Viewing Corporate America," *Journal of Applied Corporate Finance*, Summer 1990, pp. 38–59.

<sup>18</sup>"Ranking of Companies by MVA," EVA Dimensions LLC, 2011. Such a measure favors large companies and penalizes smaller companies. To show the relative market value added, one could divide the MVA by the company's annual revenue.

financial markets' assessment of the company's future net cash flows (i.e., after subtracting the investments the company must make to achieve those cash streams).

Another measurement developed by Stern Stewart is **Economic Value Added (EVA<sup>®</sup>)**. EVA is calculated as follows:

$$\text{EVA} = (\text{Return on Total Capital} - \text{Cost of Capital}) \times \text{Total Capital}$$

Actually, the calculation of return on capital (profit divided by capital) is nothing new. However, EVA subtracts an estimated cost of capital from return. If the resulting number is positive, then the company has earned more than its investors require, and thus will add to investors' wealth. In contrast, if cost is greater than return, then value is being destroyed. While EVA can be calculated for past periods to see how a company has been performing, it can also be used in evaluating future plans.

To avoid distortions created by accounting conventions, Stern Stewart makes numerous adjustments to the return and capital numbers. Actually, EVA could be said to be very much like "economic profits," which are mentioned briefly in the next section of this chapter and are discussed thoroughly in Chapter 9. However, when these numbers are calculated they are generally based on past results and do not necessarily say anything about a company's future profitability. Still, "Stern Stewart says that there is a close correlation between EVA and MVA—if managers improve EVA, the company's MVA is highly likely to improve too."<sup>19</sup>

Over the last few years, many companies have begun emphasizing the EVA measure over more traditional measures such as earnings per share and return on equity, as have money managers such as Oppenheimer, Calpers, and others.<sup>20</sup>

EVA Dimensions has also added a new measure, called EVA Momentum. It basically measures the growth rate of EVA by dividing the change in EVA for a given period by the company's sales at the beginning of the period.

## ECONOMIC PROFITS

Throughout this chapter, we use the term *profit* and assume it has some kind of meaning. But we have not defined it. We only said that profit—and its maximization—is uppermost in the company owner's and manager's minds. In a way, profit is easy to define. Every company that closes its books annually and whose accountants construct a statement of earnings (whether this company is public so everybody can see the published statement and its "bottom line," or whether it is private) knows its profits. The accountants report the level of profits, and they also affirm that everything in the financial statements has been done in conformance with generally accepted accounting principles (GAAP).

Unfortunately, things are not quite that simple. Profits as reported on an earnings statement are not necessarily definitive. Accountants have certain amounts of freedom in recording items leading to the "bottom line."<sup>21</sup> A few examples will suffice:

1. There are different ways of recording depreciation. In the past, the straight-line method, the sum-of-the-years'-digits method, the declining balance method, and probably others

<sup>19</sup>"A Star to Sail By?" *The Economist*, August 2, 1997, p. 54.

<sup>20</sup>S. Tully, "America's Greatest Wealth Creators," *Fortune*, November 9, 1998, p. 195. The following articles discuss how companies use the EVA concept: "Stern Stewart EVA<sup>TM</sup> Roundtable," *Journal of Applied Corporate Finance*, Summer 1994, pp. 46–70; S. Milunovich and A. Tsuei, "EVA<sup>®</sup> in the Computer Industry," *Journal of Applied Corporate Finance*, Spring 1996, pp. 104–15; A. Jackson, "The How and Why of EVA<sup>®</sup> at CS First Boston," *Journal of Applied Corporate Finance*, Spring 1996, pp. 98–103.

<sup>21</sup>Some writers in this field have said that accountants take too many liberties. Professor Abraham Briloff has written a number of books and articles on this subject.

have been used. Under present tax law, the Modified Accelerated Cost Recovery System (MACRS) is most frequently employed.

2. There are various ways of recording inventories, the famous FIFO (first-in, first-out) and LIFO (last-in, first-out) being just two alternatives.
3. Amortization of such items as goodwill and patents can be recorded differently.

This is just a small sample of the better-known alternative treatments by accountants, and any of these are in conformance with GAAP. Moreover, the tax return that a company completes and sends to the IRS may be quite different from the published statement of a public company.

As if the question of what accounting profits really are were not enough, the economist compounds this problem even further. Everybody agrees that profit equals revenue minus costs (and expenses). But economists do not agree with accountants on the concept of costs. An accountant reports costs on a historical basis. The economist, however, is concerned with the costs that a business considers in making decisions, that is, future costs. We concern ourselves with this concept more thoroughly later in this book, but we must touch on the subject now, albeit briefly. Basically, economists deal with something they call *opportunity costs* or *alternative costs*. This means that the cost of a resource is what a business must pay for it to attract it into its employ or, put differently, what a business must pay to keep this resource from finding employment elsewhere. To get down to specific examples, we can mention the following:

1. **Historical costs versus replacement costs:** To an economist, the replacement cost of a piece of machinery (and, therefore, the level of periodic depreciation on the replacement cost) is important, whereas an accountant measures cost—and depreciation—on a historical basis.
2. **Implicit costs and normal profits:**
  - a. The owners' time and interest on the capital they contribute are usually counted as profit in a partnership or a single proprietorship. However, the owners could work for someone else instead and invest their funds elsewhere. So these two items are really costs to the business and not profit.
  - b. The preceding item is not relevant in the case of a corporation because even top executives are salaried employees, and interest on corporate debt is deducted as an expense before profits are calculated. However, the payments made to the owners/stockholders—dividends—are not part of cost; they are recorded as a distribution of profits. But surely part of the shareholders' return is similar to the interest on debt because stockholders could have invested their funds elsewhere and required a certain return in order to leave the investment with the corporation. Thus, on this account, corporate profits as recorded by accountants tend to be overstated.

It appears, therefore, that an economist includes costs that would be excluded by an accountant. Indeed, the economist refers to the second category of costs—which are essential to obtain and keep the owners' resources in the business—as **normal profits**, which represent the return that these resources demand to remain committed to a particular firm.

Thus, **economic costs** include not only the historical costs and explicit costs recorded by the accountants, but also the replacement costs and implicit costs (normal profits) that must be earned on the owners' resources. In the rest of this book, profits are considered to be **economic profits**, which are defined as total revenue minus all the economic costs we describe in this section.

## GLOBAL APPLICATION

The model of a firm's goals discussed in this chapter applies predominantly to firms operating in the United States and possibly the United Kingdom. However, one must ask whether profit maximization or shareholder wealth maximization is also valid for other countries. It is often said that for many reasons (e.g., political, cultural, legal, and institutional), firms in other countries pursue goals that include the interests of other groups, such as labor, community, government, and so on, in addition to interests of stockholders. In some countries, for instance, labor unions are represented on the board of directors. Thus, it may be necessary to consider such interests in our discussions. However, even if such considerations are important, it is possible for us to treat them as constraints on the actions of a firm. Even if profit or shareholder wealth maximization is not the only objective, as long as firms attempt to take actions that will improve their earnings—within specific constraints—our maximization model can still be used.<sup>22</sup> It is important to recognize, however, that multinational firms (e.g., a U.S. parent corporation operating in many different countries through subsidiaries or branches) will encounter restrictions and complications, which they must consider in doing business abroad. We list these and explain them briefly:<sup>23</sup>

1. Foreign currencies and their exchange rates must be considered. Thus, revenues, costs, and other cash flows that are denominated in other currencies must be translated into domestic currencies, and their potential changes must be analyzed for their impact on the business. Under certain circumstances, a profitable activity abroad can become unprofitable from the viewpoint of the domestic parent corporation.
2. Legal differences must be taken into account. Dissimilarities in tax laws can have important consequences on results of transactions between the domestic parent corporation and its foreign subsidiary. Differences in legal systems make the tasks of executives considerably more complex.
3. Most Americans have in the past mastered only their own language, and thus, are often at a disadvantage when dealing with their multilingual counterparts in other countries.
4. The differences in cultural environments influence the defining of business goals and attitudes toward risk. Thus, such differences can greatly affect the way business is conducted.
5. The role of government in defining the rules under which companies operate varies from country to country. Although in some countries market competition prevails, in others the political process dictates the behavior of firms in much greater detail.
6. Corporations operating in different countries may be restricted from transferring corporate resources out of the country and may even face the danger of expropriation. This is political risk, which must be included in any economic analysis of a company's prospects.<sup>24</sup>

The points just discussed, as well as others, must always be considered by companies doing business abroad. Although some of the differences may have adverse effects on

<sup>22</sup>It is interesting to note that, in an interview, Heinrich von Pierer, then chief executive officer of the German electronics firm Siemens, stressed "German corporate values as concern with quality, reliability and long-term thinking." He also made the following statement: "... if people think that German businesses have an aversion to shareholder value, we are not a very good representative of such companies. ... To improve profitability and market capitalisation is the main goal." Peter Marsh, "A Conglomerate with an Air of Confidence," *Financial Times*, January 21, 2002.

<sup>23</sup>We discuss some of these subjects at greater length in Chapter 13.

<sup>24</sup>The preceding points can be found in Eugene F. Brigham and Phillip R. Daves, *Intermediate Financial Management*, Thomson Southwestern, 2004, pp. 211–212.

a company, participation in a global market is a necessity for most large (and even small) firms today. Profitability, and even survival, can depend on a company entering global markets and competing worldwide.

### The Solution

It was a lively stockholder meeting. Bob Burns was somewhat worried about what the reactions from the audience would be regarding his decision to go into the energy drink market. But he knew that he would have to be convincing because this move was an essential part of the company's growth strategy. After covering the results for the most recent fiscal year, Bob continued:

"In recent years, we've experienced some tough going largely due to the recession brought on by the 2008 financial crisis. Throughout this period, your management has maintained as its primary objective to continue to increase the value of your investment in the company. We are well aware that the price of our stock has not been increasing at the rate it did prior to the recession. However, throughout this period we have remained committed to a long-run increase in the price of our stock. To accomplish this goal, we need to return to the double-digit annual increase in revenue as well as profit.

"As part of this growth strategy, we have decided to enter the growing market for energy drinks. Over the past decade, this has been a rapidly growing segment of the beverage business, particularly among 18- to 34-year-olds. This is a segment that spends a lot for beverages. Energy drinks are popular in the growth markets in Asia. It also has great potential in other growth countries such as Brazil.

"To maintain and increase profits in recent years, we have been focusing mainly on cutting costs through productivity increases and operational excellence. But there is a limit to such endeavors. In the long run, we must find new products and growing markets to increase our top and bottom lines and thus discharge our responsibility to you, our stockholders, to increasing the value of your stock. Entering the market for energy drinks is one of the ways that we believe will bring this about."

## SUMMARY

In this text, we generally assume a firm's short-run or long-run objective is the maximization of its profit or the minimization of its loss. Although a firm can select from a number of other goals, both in the short run and in the long run, the assumption of profit maximization provides us with a clear-cut model for explaining how firms can use economic concepts and tools of analysis to make optimal decisions. In presenting these concepts and tools of analysis, a certain amount of mathematics will be employed. Thus, before proceeding to the next chapter, we believe that a brief review of the mathematics used in this text will be helpful. This review is contained in the online appendix.

## IMPORTANT CONCEPTS

**Business risk.** The variability of returns (or profits) due to fluctuations in general economic conditions or conditions specifically affecting the firm. (p. 55)

**Economic cost.** All cost incurred to attract resources into a company's employ. Such cost includes explicit cost usually recognized on accounting records as well as opportunity cost. (p. 59)

**Economic profit.** Total revenue minus total economic cost. An amount of profit earned in a particular endeavor above the amount of profit that the

firm could be earning in its next best alternative activity. Also referred to as *abnormal profit* or *above-normal profit*. (p. 59)

**Economic Value Added (EVA).** The difference between a company's return on total capital and its cost of capital. (p. 58)

**Financial risk.** The variability of returns (or profits) induced by leverage (the proportion of a company financed by debt). The higher the leverage, the greater the potential fluctuation in stockholder earnings for a given change in total profits. (p. 55)



**Firm.** An organization that transforms resources into products demanded by consumers. The firm chooses to organize resources internally or to obtain them through the market. (p. 45)

**Market Value Added (MVA).** The difference between the market value (equity plus debt) of a company and the amount of capital investors have paid into the company. (p. 57)

**Noneconomic objectives.** A company's objectives that do not appear to be governed by economic thinking but rather define how a business should act. "Acting as a good corporate citizen" is an example of a noneconomic objective. (p. 51)

**Normal profit.** An amount of profit earned in a particular endeavor that is just equal to the profit that could be earned in a firm's next best alternative activity. When a firm earns normal profit, its revenue is just enough to cover both its accounting cost and its opportunity cost. It can also be considered as the return to capital and management necessary to keep resources engaged in a particular activity. (p. 59)

**Opportunistic behavior.** One party to a contract seeks to take advantage of the other. (p. 45)

**Optimal decision.** The decision that enables the firm to meet its desired objective most closely. (p. 49)

**Profit maximization hypothesis.** One of the central themes in economics, the claim that a company will strive to attain the highest economic profit in each period. (p. 49)

**Satisficing.** A concept in economics based on the principle that owners of a firm (especially stockholders in a large corporation) may be content with adequate return and growth since they really cannot judge when profits are maximized. (p. 52)

**Transaction costs.** Cost incurred by a firm in dealing with another firm, including the cost of investigation, negotiation, and enforcement of contracts. (p. 45)

**Wealth maximization.** A company's management of its business in such a manner that the cash flows over time to the company, discounted at an appropriate discount rate, will cause the value of the company's stock to be at a maximum. (p. 56)

## QUESTIONS

1. Discuss the difference between the calculation of shareholder wealth and the concept of *Market Value Added*. Which of the two would appear to be more meaningful from the viewpoint of a shareholder?
2. What are transaction costs? How does *opportunistic behavior* tend to increase transaction costs?
3. The outsourcing of important parts of a company's production has been growing in recent years. How would you explain these changes? How has the Internet contributed to these changes?
4. A company has 2 million shares outstanding. It paid a dividend of \$2 during the past year, and expects that dividends will grow at 6 percent annually in the future. Stockholders require a rate of return of 13 percent. What would you expect the price of each share to be today, and what is the value of the company's common stock?
5. You have a choice of opening your own business or being employed by someone else in a similar type of business. What are some of the considerations in terms of opportunity costs that you would have to include in arriving at your decision?
6. What are some reasons for companies internalizing transaction costs?
7. Do you believe that the profit maximization model can be applied to the activities of a multinational corporation? Explain.
8. Various depreciation methods can be used to arrive at an accounting profit number. From the viewpoint of the economist, how should annual depreciation be determined?
9. Discuss basic reasons that profit maximization is not consistent with the maximization of shareholders' welfare.
10. Because of inflation, a company must replace one of its (fully depreciated) machines at twice the nominal price paid for a similar machine 8 years ago. Based on present accounting rules, will the company have covered the entire cost of the new machine through depreciation charges? Explain by contrasting accounting and economic costs.