Managerial Economics

Seventh Edition

McGuigan ■ Moyer ■ Harris

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James R. McGuigan
JRM Investments

R. Charles Moyer
Babcock Graduate School of Management
Wake Forest University

Frederick H. deB. Harris
Babcock Graduate School of Management
Wake Forest University

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To my family

—J.R.M.—

To Craig and Laura

—R.C.M.—

To my family

—F.H.B.H.—

Preface

Managerial economics is concerned with resource-allocation decisions that are made by enterprise managers in the private, public, and not-for-profit sectors of the economy. Managerial economists seek to achieve the objectives of the organization in the most efficient manner, while considering both explicit and implicit constraints on achieving the objective(s). The book is organized around the theme of the goal of shareholder wealth maximization for private sector enterprises. In addition, the theme of managerial efficiency provides a common basis for making resource-allocation decisions in all enterprises.

Managerial economics is an *applied* branch of economics. The major emphasis is to provide the theory and tools essential to the analysis and solution of those problems that have significant economic consequences, both for the firm and society at large. Effective decision making requires an understanding of the constraints (limitations) imposed on the decision maker by the environment. To accomplish this, major issues associated with government regulation of the firm, as well as implicit constraints on the actions of private and public sector enterprises, are examined. These issues include a consideration of the externalities associated with economic decisions.

Course Content

A survey of managerial economics and business economics courses in a wide range of universities has led to a broad consensus on topic coverage in some areas, but a wide diversity of coverage in other areas. In organizing the book, we have recognized the differences existing in various curricula. The broad topic coverage provided in the text gives instructors a great deal of flexibility in designating a course suited to the needs of their students and the demands of their curricula.

Part I of the book provides an overview of managerial economics and introduces key economic concepts and tools. In these introductory chapters, the goal of the enterprise (shareholder wealth maximization) is established, the decision-making process and philosophy of optimization are introduced, the role of profit is discussed, and the relationship between managerial economics and other areas of business and economic analysis is developed. In addition, this section introduces the fundamental economic concepts of marginal analysis, net present value, risk, risk versus return analysis, and classical optimization.

Part II examines the areas of demand analysis and forecasting techniques. Part III deals with production and cost analysis, and Part IV focuses on price determination in theory and practice. The extent of, rationale for, and consequences of government regulation also is covered in Part IV. Part V includes a coverage of capital budgeting, cost-benefit analysis, cost-effectiveness analysis, and risk analysis and management.

Although the primary focus of the book is on private sector management, the text is written with a recognition that many students of economics and business management pursue careers in the public and not-for-profit sectors of the economy. Consequently, we have included a discussion of the philosophy of public involvement in the economy, the objective of public and not-for-profit organizations, and coverage of specific analytical tools that are of use in these sectors.

This seventh edition represents a major revision of the text. Two new chapters have been added to this edition. Chapter 12 provides a contemporary, in-depth look at competitive decision making under information asymmetry. Specific topics include asymmetric information exchange, the "lemons market," solutions to adverse selection problems, principal-agent problems in labor markets, and incentive signaling. Chapter 15 provides extensive coverage of game theory in the context of oligopolistic rivalry. The chapter covers business strategy games, sequential games, simultaneous games, and applications to the problems of excess capacity, scale of entry, and entry deterrence. In addition to these new features, we have retained, expanded, and updated the most popular features from the sixth edition, including many new Managerial Challenge sections and an expanded use of examples and applications throughout the text.

Student Preparation

The text is designed for use by upper-level undergraduates and first-level graduate students in departments of economics, schools of business, schools of management, and schools of public administration. Students are presumed to have a background in the basic principles of economics. Prior course work in statistics and quantitative methods is desirable, but not essential because all of the concepts employed in the text are fully developed within the text itself. The book makes occasional use of elementary concepts of differential calculus. A review of these basic concepts is contained in Chapter 3. However, in all cases where calculus is employed, one or more alternative approaches, such as graphical, algebraic, or tabular analysis, is also presented.

Pedagogical Features of the Seventh Edition

The seventh edition of *Managerial Economics* makes extensive use of pedagogical learning aids to enhance student learning. The key features of the book are:

1. **Part Openers.** Each major section of the book opens with a brief discussion of the material contained in the following chapters. The relationship of the material in the section to the goal of shareholder wealth maximization and efficient resource allocation is illustrated with a schematic diagram appearing on the first page of each part opener.

2. **Managerial Challenges.** Each chapter opens with a Managerial Challenge that illustrates a real-life economic analysis problem faced by managers that is related to the material to be covered in the chapter. Many of these challenges have been updated with more contemporary illustrations.

3. **Chapter Glossaries.** In the margins of the text, new terms are defined as they are introduced. The placement of the glossary terms next to the location where the term is first used reinforces the importance of these new concepts and aids in later studying. An index to the glossary is provided at the end of the text.

4. **Chapter Preview.** Each chapter begins with a Chapter Preview that briefly summarizes the major issues that are covered in the chapter.

5. **International Perspectives.** Throughout the book, special International Perspectives sections are provided that illustrate the application of managerial economics concepts to problems faced by managers in an increasingly global economy.

6. Extensive Use of Examples. Many new examples, derived from both actual practice and hypothetical data, are provided and highlighted throughout the text. These examples help the tools and concepts to come alive and thereby enhance student learning.

7. Point-by-Point Summaries. Each chapter ends with a detailed, point-by-point summary of important concepts from the chapter.

8. Diversity of Presentation Approaches. Important analytical concepts are presented in several different ways, including tabular analysis, graphical analysis, and algebraic analysis. When elementary differential calculus is used, at least one alternative mode of analysis also is presented for the student.

9. Exercises. Each chapter contains a large problem analysis set. Many new problems have been added to this edition. Check answers to selected problems are provided at the end of the text.

10. Short Cases. Many chapters include short case problems that extend the concepts and tools developed in the text.

Ancillary Materials

A complete set of ancillary materials is available to adopters to supplement the text, including the following:

- Two packages of computer software are provided free to adopters of the book. The ForeProfit software, prepared by Professor Joe Kreitzer at the University of St. Thomas, is a user-friendly, free-standing package that provides on-screen help and user diagnostics. The software can be used to solve regression analysis, forecasting, linear programming, capital expenditure, and cost-benefit analysis problems. Documentation for this software is provided in Appendix C to the text. In addition, for those users who prefer a Lotus-based software package, a Lotus-based software supplement is available that has been prepared by Professor Robert Ritchey at Texas Tech University. This software performs regression analysis, forecasting, linear programming, and capital budgeting analysis.
- An *Instructor's Manual,* prepared by the authors, contains suggested answers to the end-of-chapter exercises and cases. The authors have taken great care to provide an error-free manual for instructors to use. The manual will be available both in a hard copy form and on disk (MS-Word) to make it easy for instructors to provide portions of these solutions to students, if desired.
- A *Test Bank,* containing a large collection of true-false, multiple choice, and numerical problems, is available to adopters for test use. The computerized *WestTest* software and diskette of the *Test Bank* are available to simplify the preparation of quizzes and exams.
- A revised and updated *Study Guide,* prepared by Professor Richard D. Marcus at the University of Wisconsin-Milwaukee, is available from West Publishing Company for purchase by students. The *Study Guide* provides valuable assistance to students when reviewing and applying the material presented in the text.
- Transparencies have been prepared for the key tables and figures from the book.

Significant Changes in the Seventh Edition

The seventh edition has been revised and updated to streamline the presentation, to provide additional contemporary applications, and to enhance student learning.

Many new topics have been added to reflect recent developments in the field—especially in the fields of applied game theory and decision making under information asymmetry. The most important changes are enumerated below.

- **Chapter 1 (Introduction and Goals of the Firm):** The tie between executive compensation and shareholder wealth maximization has been added to the chapter. There is an expanded coverage of the principal-agent problems in economics. Finally, a new section dealing with the implications of the shareholder wealth maximization goal has been added.
- **Chapter 2 (Fundamental Economic Concepts):** The notation used throughout the chapter has been simplified and made more intuitive. New examples have been added.
- **Chapter 3 (Optimization Techniques):** The relationship between marginal analysis and differential calculus has been simplified through the use of additional figures and a more intuitive discussion. Several new exercises have been added.
- **Chapter 4 (Theory of Demand):** The discussion of utility maximization and demand has been expanded and simplified. Several new examples have been added, including some with international implications.
- **Chapter 5 (Estimation of Demand):** New examples, based on empirical research, have been added.
- **Chapter 6 (Business and Economic Forecasting):** The mean absolute deviation measure of forecasting accuracy has been added to the discussion. Discussion of the use of "dummy" variables has been increased. New examples, based on empirical research, have been added. Appendix 6A has been updated with the latest input-output tables.
- **Chapter 7 (Theory of Production):** A more intuitive discussion of the relationship between marginal and average concepts has been developed. There is an expanded discussion of the three stages of production, and several new exercises have been added.
- **Chapter 8 (Theory of Cost):** New examples based on empirical research have been added.
- **Chapter 11 (Price and Output Determination: Pure and Monopolistic Competition):** There is an expanded coverage of long-run and short-run conditions in monopolistic competition, including an extended analytical example. The impact of price ceilings and floors has been added.
- **Chapter 12 (Competitive Markets under Asymmetric Information):** This is a totally new chapter.
- **Chapter 13 (Price and Output Determination: Monopoly):** New examples have been added, and the material on regulated monopolies has been updated to reflect current trends in deregulation.
- **Chapter 14 (Price and Output Determination: Oligopoly):** Coverage of cartel pricing problems has been expanded. Discussion of cooperative and noncooperative games in the context of oligopolistic price and output determination also has been greatly expanded.
- **Chapter 15 (Game-Theoretic Oligopolistic Rivalry):** This is a totally new chapter.
- **Chapter 17 (Government Regulation):** This chapter has been extensively revised and reorganized to focus on the rationale and economic impact of regulation. Discussion of concentration ratios and the Herfindahl index has been added. New pieces of important legislation are discussed, and a major new section analyzing the impact of antitrust laws on business decisions has been added.

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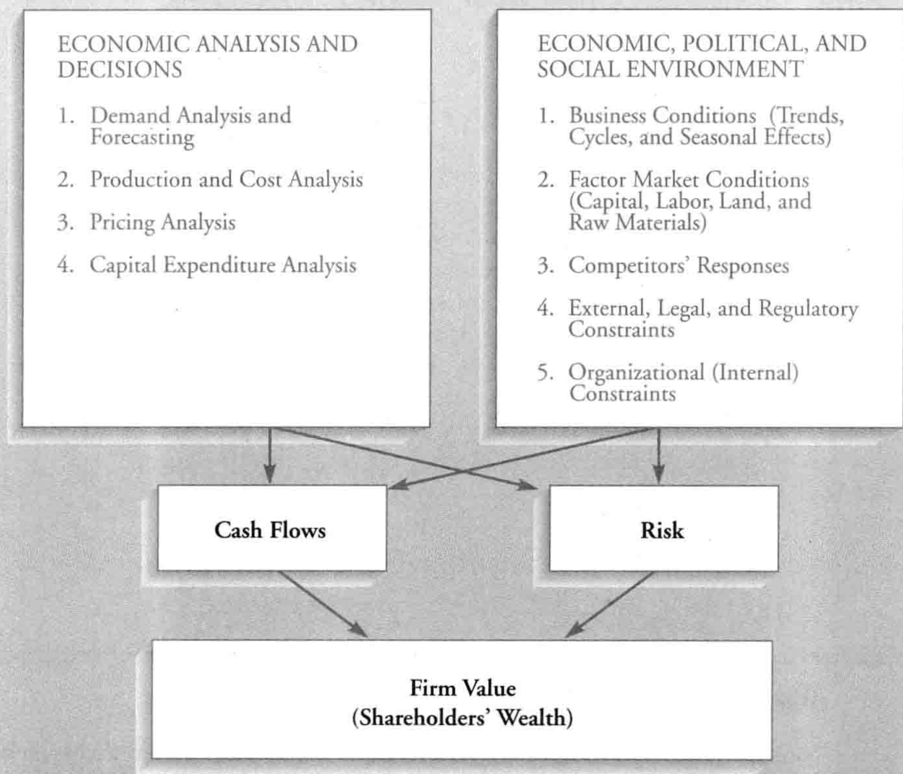
Part I

Introduction



Part I (Introduction) presents an overview of managerial economics and introduces some key economic concepts and tools. In the first chapter, the goals of the enterprise (both the for-profit firm and the not-for-profit organization) are developed; the decision-making process and the philosophy of optimization are introduced; the role of profit is discussed; and the relationship between managerial economics and other branches of economics, accounting, finance, marketing, operations management (production), and labor relations are highlighted. Chapter 2 reviews fundamental economic concepts, including marginal analysis, net present value, risk versus return analysis, and basic risk concepts. Chapter 3 introduces classical optimization techniques. A review of basic calculus concepts used in the text is included in Chapter 3. The tools and concepts developed in Part I are central to the analysis used throughout the balance of the text.

Chapter 1

Introduction and Goals of the Firm

CHAPTER PREVIEW Managerial economics is a branch of economics dealing with the application of economic theory and methodology to decision-making problems faced by private, public, and not-for-profit institutions. Managerial economists assist decision makers (managers) in efficiently allocating the scarce economic resources at the command of the organization. Economic profit is defined and the role of profits in allocating resources in a free enterprise system are examined. The primary normative goal of the firm, namely, shareholder wealth maximization, is developed along with a discussion of how managerial decisions influence shareholder wealth. Next, the problems associated with the separation of ownership and control in large corporations are explored. Finally, appropriate normative goals to guide resource-allocation decisions in public sector and not-for-profit enterprises are discussed.

What is Managerial Economics?

Managerial economics deals with the application of economic theory and methodology to decision-making problems faced by private, public, and not-for-profit institutions. The field of managerial economics has experienced rapid growth over the past three decades. This growth reflects a realization that managers can use economic theory to make decisions consistent with the goals of the organization. Managerial economics extracts from economic theory (particularly microeconomics) those concepts and techniques that enable the decision maker to allocate efficiently the resources of the organization.

The tools of managerial economics can be applied by managers in profit-seeking firms and in the public and not-for-profit sectors of the economy because managers in all types of enterprises face a common set of problems. Despite some unique complexities, managerial problems generally follow this form:

> To identify the alternative means of achieving given objective(s), and then to select the alternative that accomplishes the objective(s) in the most resource efficient manner.