Instructor's Manual for MICROECONOMICS FOR BUSINESS DECISIONS

Solberg

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Microeconomics
for Business Decisions

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Content, Organization, and Usage

Microeconomics for Business Decisions

Content and Organization

Microeconomics for Business Decisions is designed for students of business administration, economics, and public policy. I have included the most relevant topics found in traditional price theory and managerial economics textbooks. Thus this text is a hybrid of the two traditional approaches. My goal was to retain the richness of traditional price theory but with a focus on those aspects most relevant to managerial decision making while avoiding the mechanistic nature of most managerial texts.

The textbook is self contained. No prerequisites beyond an ability to understand graphs and to do simple algebra are required. An appendix, **Functions, Graphs & Using Calculus,** is intended primarily for students who need to review the use of functions and graphs. However, that appendix can be used along with chapter appendixes if you choose to teach a calculus based course of study. There are several end-of-chapter appendixes that present the calculus version of some models. But the text itself is not calculus based. Other material like the application of statistics to decision making is developed in context when needed.

This book is organized into sixteen chapters that are grouped into five major parts:

Part I Markets: Demand and Supply
- **Chapter 1 Preliminaries**
- **Chapter 2 The Economic Problem**
- **Chapter 3 The Basics of Demand and Supply**
- **Chapter 4 Elasticities of Demand and Supply**

Part II Microeconomic Choice
- **Chapter 5 Individual Choice and Demand**
- **Chapter 6 Time and Intertemporal Choices**
- **Chapter 7 Information, Risk, and Uncertainty**

Part III Estimation and Forecasting
- **Chapter 8 Model Estimation**
- **Chapter 9 Business and Economic Forecasting**

Part IV Technology, Production, and Cost
- **Chapter 10 Technology and Production**
- **Chapter 11 Measuring the Costs of Production**

Part V Market Structure and the Price System
- **Chapter 12 Purely Competitive Market Behavior**
- **Chapter 13 Monopoly and Monopolistic Competition**
- **Chapter 14 Oligopoly and Game Theory**
- **Chapter 15 Pricing Strategy and Practices**
- **Chapter 16 Government Regulation and Antitrust**

Appendix A Functions, Graphs, and Using Calculus
Appendix B Statistical Tables

Each part starts with a survey of what topics will be covered and why. Each chapter starts with an outline and ends with a summary of major findings. Within each chapter, sections marked with an asterisk, at the discretion of the instructor, can be be skipped without loss of continuity.

Microeconomics for Business Decisions is not organized in the traditional way. In a more traditional chapter organization topics like factor markets and welfare economics are covered in separate chapters — usually toward the end of the book. In contrast, those topics and others — like the efficient use of resources, technical progress, and international business — are woven into the fabric of the text from the very beginning. Nevertheless, the overall organization is designed to be flexible so that instructors may skip some topics to concentrate more fully on others. Material that is most likely to receive optional treatment appears in sections marked with an asterisk. The core chapters are contained in Parts II, IV, and V.

Part I gives students some perspective on how markets work. Chapter 1 includes scope and method, the role of property rights, externalities, and Coase's Theorem. Chapter 2 defines the economic problem, production possibilities, comparative advantage, and opportunity costs, and it introduces the circular flow model of the market economy. Chapter 3 covers the basics of market pricing, buyer and seller surpluses, and interdependent markets. Chapter 4 deals with the elasticities of demand and supply. If your course has a prerequisite of principles of economics, you can probably skip chapters 1 and 2 and review the material in chapters 3 and 4 quickly.

Part II deals with microeconomic choices. Chapter 5 starts with the budget constraint. Revealed preference is used to study consumer choice initially, and the decomposition of price effects is accomplished using revealed preference rather than indifference curves. This approach has an empirical connotation that appeals to students. Later in Chapter 5, after indifference curves and utility maximizing have been covered, the income and substitution effects are reconsidered. Topics like equivalent and compensating variations, and the Giffen good paradox, have been avoided to keep the presentation simple. Instead, the chapter applies the model to buying and

selling decisions, work-leisure choice, and gains from exchange. Chapter 5 ends with an optional section on using index numbers. There is a calculus version of the consumer choice model presented in an end-of-chapter appendix.

Part II continues by extending and applying the model of individual choice. Chapter 6 begins with the two-period budget line and saving decisions. Other topics include the real rate of interest, arbitrage, the internal rate of return, and investment demand. Chapter 6 ends with a brief consideration of the demand for public goods and the use of cost-benefit analysis in making public sector investment decisions. Chapter 7 deals with information, risk and uncertainty. Topics include asymmetric information, the principal-agent problem, expected utility, risk aversion, portfolio choice, capital asset pricing, decisions under uncertainty, hedging, and the value of information. If you plan to teach the topics in Chapters 8 and 9 on estimating and forecasting, you should emphasize the definitions of mean, variance, covariance, and correlation contained in Chapter 7. A review of those concepts will probably be needed even if your students have taken a statistics course.

Part III deals with how information, historical data, and events can be used to reduce uncertainty. Chapter 8 concentrates on estimating economic models using least-squares regression. The focus is primarily on model specification and interpretation. The Chapter 8 appendix deals with the conduct of formal hypothesis tests, and so this appendix material can be easily skipped. Chapter 9 deals with forecasting. Either of these chapters can be skipped without loss of continuity if you wish to spend more time on other topics. However, these chapters are important if your course emphasizes managerial economics.

Part IV returns to the core and lays the foundation for the study of the behavior of firms under different forms of market structure. Chapter 10 starts with the production technology and the production function. Special attention is given to the roles of technology and productivity. While the main focus is on the smooth model, the linear (activity analysis) version of production is also included. Chapter 10 ends with an optional section on linear programming and technological efficiency. Chapter 11 then introduces input prices and converts production functions into cost functions. The relationships between short- and long-run costs are covered thoroughly. Other topics include long-run cost minimizing, scale effects, economies of scope, external economies or diseconomies, and statistical cost estimation. There are optional sections on Shepherd's lemma and, at the end of the chapter, the application of the activity analysis model to the study of cost. An appendix to Chapter 11 summarizes the calculus version of the costs of production.

Part V integrates the previous material into a comprehensive model of the market economy. Chapter 12 concentrates on pure competition starting with short-run output supply and derived

input demand. It continues with the corresponding long-run decisions for the competitive firm and industry. This chapter ends with a look at general long-run competitive equilibrium followed by an optional section on the distribution of income and efficiency under competition. Chapter 13 deals with the consequences of monopoly power. Topics include pure monopoly, monopolistic competition, the dominant firm model, contestable markets, monopsony, and bilateral monopoly. You will notice that, once again, both input and output markets have been covered. Chapter 14 covers oligopoly — including Sweezy's kinked-demand model, Edgeworth's duopoly model, price-leadership models, and Cournot's duopoly model. The focus of this chapter is on strategic behavior. Topics include Nash equilibria, cartels, gaming, the prisoners' dilemma, and tit-for-tat strategies. Chapter 15 focuses on pricing strategies and practices under all forms of market structure. After examining cost-plus pricing, this chapter covers new product pricing, quality, advertising, peak-load pricing, price discrimination, bundling, the two-part tariff, resale price maintenance, and transfer pricing. It ends with two optional sections that deal with pricing of jointly produced products. Chapter 16 deals with government regulation and antitrust. It starts with a look at protective regulation, environmental regulation, and public utility regulation. It continues by surveying past and recent antitrust policy including the most recent merger policy guidelines. The chapter concludes with a look at pricing practices and the law.

Using the Textbook

This is a lot to cover in any one course. However, I am able to cover all sixteen chapters in a one-semester (sixteen-week) course in business microeconomics taught at the upper division level where prerequisites include calculus and principles of economics and where there is a statistics corequisite. Similarly, I am able to cover all sixteen chapters in a course on the price system and resource allocation taught to graduate business (MBA) students where the only prerequisite is calculus. But graduate students are highly motivated and capable of an accelerated pace, and I don't use calculus in either course. When I use the material in a price theory course for economics majors, I assign the end-of-chapter appendixes that apply calculus and skip Chapters 8 and 9.

For a quarter-length course (twelve weeks), I would cover Part I quickly, and mostly as review, and omit Part III altogether, thereby concentrating on the core in Parts II, IV and Part V. In a two-quarter sequence, I would cover Chapters 1 through 9 in the first quarter, and then Chapters 10 through 16 in the second.

The detailed chapter-by-chapter outline that makes up the book's **Table of Contents** is sufficiently descriptive that I will not replicate it here. However, you might call your students'

attention to the brief outlines at the beginning of each chapter, the concept boxes that highlight important terms and concepts, the glossary of terms at the end of the book, and the glossary of symbols inside the cover. They should be cautioned not to skip the applications, because that is where the theory's relevance is demonstrated and occasionally extended in new ways. They also should be urged to try the end-of-chapter problems. Check solutions to all odd-numbered problems appear toward the back of the book. Full solutions to all of the end-of-chapter practice problems are in the next section of this *Instructor's Manual*. Those problems can be used for homework assignments or for testing student progress.

A set of transparency masters is included in this manual for your use in preparing overheads for lectures. Included in the masters are all chapter figures including their captions, all concept boxes from each chapter, selected tables and other key material. It should be possible to structure lectures entirely around overheads made from the transparency masters. Also, as a pedagogical device, the masters could be used to package "handouts." Then, as in many professional workshops, students can use a handout to structure their note taking while avoiding the necessity to replicate graphs. In this way students could concentrate more on understanding the lecture rather than be burdened with the necessity of taking copious notes.

SOLUTIONS

Microeconomics for Business Decisions

Chapter 1 Preliminaries

1.1 (a) Normative, because of the word *poor*. (b) Normative, because of the word *good*. (c) Positive; the policy is established. (d) Positive; just count the number of winners and losers.

1.2 The student should discuss the criteria for judging the validity of models. In particular, the frequency of an accurate prediction should be considered. Does a model have to be 100 percent accurate 100 percent of the time?

1.3 A legal rule that describes a condition of ownership. Without property rights that define the right to own, use, and sell things, contracts would not be enforceable and trade would be inhibited.

1.4 Pure competition exists when many buyers and sellers acting independently trade a homogeneous product. Perfect competition also requires the perfect mobility of resources, perfect knowledge about the market, and an absence of externalities.

1.5 An externality in production occurs when production costs do not equal social costs in the supply of some good. One example is effluents dumped in a sewer without cost to the producer after being generated in a manufacturing operation. An externality in consumption occurs when the social cost of a good is different from the price of the good. An example is the noise pollution caused by playing a stereo set so loudly that it bothers your neighbor. Another example is the ambient smoke from a cigarette to a nonsmoker.

1.6 (a) Some of the options facing this firm are: switch to another finish other than varnish — one that does not generate a prohibited effluent; install equipment that will eliminate any of the banned effluents from using varnish or other finishes; move the finishing operation to another geographic location; go out of business. You may be able to think of other options. In order to make the best decision, you would need to calculate the economic costs of each alternative, and you would need to calculate and compare the net present values of the various alternatives.

(b) Instead of a complete ban on the effluents, local government might consider placing a limit on the total level of effluent emitted. Or it might place an effluent fee on emissions to provide incentives to reduce emissions without a total ban. These alternatives will require or encourage the affected firms to reduce emissions without chasing the firm to another location or driving it out of business. Reduced employment might thereby be minimized, and taxes paid by the firm might continue to be a source of local revenue.

1.7 The merger should be judged on whether or not it is anticompetitive and whether or not cost savings will be passed along to consumers.

Chapter 2 The Economic Problem

2.1 Scarcity. Insatiable wants and limited resources.

2.2 Available resources provide limits on the maximum output levels for all goods. The mix of resources available influences substitution possibilities. A nation has a comparative advantage in producing a good when its opportunity cost is lower than that of other nations.

2.3 Banana should specialize in products in which it has a comparative advantage. Thus it should not produce chips as long as some other firm has a comparative advantage unless it chooses to do so for strategic reasons — say, to protect a crucial supply of the component. If Banana has a comparative advantage over some range of producing chips, then it should produce chips until that advantage is dissipated by diminishing returns. At the level of production where it loses its comparative advantage, Banana should stop producing chips. If it needs more to produce its computers and other products, then it should buy them. If it produces more chips than it needs, then Banana should sell the excess. We consider these issues in more detail in the section on transfer pricing in Chapter 15.

2.4 The opportunity costs are:

	Wheat (bushels)	Cloth (yards)
America	0.60	1.67
Korea	2.00	0.50

America has an absolute advantage in producing both goods. America has a comparative advantage in producing wheat, and Korea has a comparative advantage in producing cloth. The gains from specialization are:

	Wheat (bushels)	Cloth (yards)
America	+1	−0.60
Korea	−0.50	+1
Totals	+0.50	+0.40