

---

# Contents

---

<b>Preface</b>	xvii
<b>Chapter 1 Introduction</b>	1
What is Microeconomics?	1
How Can Microeconomics Methods Be Used?	1
<i>Beef and gasoline shortages</i>	1
<i>Urban mass-transit</i>	2
<i>Air and water pollution—problems of the environment</i>	3
<i>Business tax policy</i>	3
<i>Effects of regulating economic activity</i>	4
Production, Consumption, Markets, and Prices	4
Empirical Observation and Theories	6
Models of Economic Behavior and Their Analysis	7
The Elements of a Choice Problem	7
Summary	9
<b>Chapter 2 Individual Preferences and Consumption Choice Decisions</b>	10
Introduction	10
Representing Individual Preferences	10
Properties of Indifference Curves	13
The Marginal Rate of Substitution	14
The Concept of Utility	15
Cardinal versus Ordinal Utility: The Question of Measurement	18
Solution of a Fundamental Choice Problem	19
A Closer Look at the Character of an Optimal Solution	21

Changing Prices and Changing Market Baskets	24	
Preference Measurement: An Application to Product Design		26
Summary	27	
Questions for Study or Class Discussion	27	
<b>Chapter 3 An Individual's Demand Schedule</b>		<b>29</b>
Introduction	29	
From Choice to the Concept of Demand	30	
Analyzing the Effect of Income Changes	33	
Normal and Inferior Goods	34	
Analyzing the Effect of Price Changes	35	
Consumers' Surplus: A Measure of Maximum Market Value		40
Revealed Preference and Cost of Living Price Indices: An Application	42	
*Uncertain Prices, Market Search, and Random Demand		47
Summary	48	
Questions for Study or Class Discussion	50	
<b>Chapter 4 Market Demand and Its Measurement</b>		<b>51</b>
Introduction	51	
Building the Market Demand Schedule	51	
A Numerical Example of Choosing a Commodity to Tax		53
Elasticity: A Key Working Tool	54	
Numerical Examples of Elasticity Calculation and Their Interpretation	57	
A Geometrical Calculation of Price and Income Elasticities		59
Major Factors Affecting the Numerical Value of Elasticities		60
Empirical Measurement of Demand Relationships	61	
<i>Interpreting market observations</i>	62	
<i>Estimates of price and income elasticities and their interpretation</i>	64	
<i>Estimates of cross-price elasticities and their interpretation</i>		66
<i>Some estimates of demand relationships</i>	67	
Additional Information From the Market Demand Schedule		69
Summary	72	
Questions for Study or Class Discussion	72	
<b>Chapter 5 Firm Behavior and Market Environments</b>		<b>74</b>
Introduction	74	
Alternative Behavior Rules for a Firm	75	
<i>Profit maximization</i>	75	

<i>Sales and output maximization</i>	76	
<i>Growth as a goal</i>	77	
<i>Maximization of managerial utility</i>	78	
<i>Satisficing behavior</i>	79	
<i>Organizational behavior</i>	79	
<i>*Decisions under uncertainty</i>	80	
The Market Environment of a Firm	82	
<i>The role of markets</i>	82	
<i>Pure competition</i>	83	
<i>Pure monopoly</i>	83	
<i>Monopolistic competition</i>	84	
<i>Oligopoly—strategic market settings</i>	84	
Public Policy, Market Structure, and Market Performance		85
<i>Antitrust laws</i>	85	
<i>Ownership, control, and profits</i>	85	
<i>Patents and copyrights</i>	86	
<i>Regulation of economic activity</i>	87	
Summary	87	
Questions for Study or Class Discussion	88	

## **Chapter 6 Production Technology and Input Choice Decisions**

90

Introduction	90	
A Basic Description of Production Technology	90	
<i>Production with one variable input</i>	90	
<i>The “law of diminishing returns” and the stages of production</i>	92	
<i>Production with two variable inputs</i>	93	
<i>Input substitution and the marginal rate of technical substitution (MRTS)</i>	94	
Least Cost Production—Input Choice	95	
<i>The isocost curve and optimal input choice</i>	96	
<i>The anatomy of an optimal solution</i>	97	
<i>The expansion path</i>	99	
<i>Derived demand for inputs</i>	101	
An Alternative View of Isoquants	102	
Empirical Measurement of Production Relationships		105
Returns to Scale	107	
Elasticity of Input Substitution	108	
Policy Evaluation for Pollution Control	110	
Determining the Economic Feasibility of an Innovation		115
*Uncertainty in the Production Function	117	

Summary	117
Questions for Study or Class Discussion	118

**Chapter 7 Costs as a Basis for Decisions** 119

Introduction	119
<i>Short-term versus long-run costs</i>	119
<i>Opportunity costs: accounting versus economic costs</i>	119
<i>Private versus social costs</i>	120
Basic Cost Concepts	121
A Numerical Example	122
From Least Cost Production to Cost Schedules	123
Cost and Supply Schedules	126
<i>The firm's short-run supply schedule</i>	126
<i>The short-run market supply schedule</i>	130
<i>The firm's long-run cost and supply schedule</i>	130
<i>The shape of short-run and long-run cost curves</i>	132
More Numerical Examples	133
<i>Example 1: The MR = MC rule</i>	133
<i>Example 2: An algebraic example of revenues, costs, and profits</i>	134
Empirical Examples of Cost Functions	135
An Empirical Example of Average Costs from Different Technologies	139
An Application of Costs to a Public Utility Pricing Problem	140
*Uncertain Input Prices, an Uncertain Production Function, and Uncertain Costs	141
Summary	141
Questions for Study or Class Discussion	142

**Chapter 8 Linear Programming As an Aid to Decision Making** 143

Introduction	143
The General Form of a Linear Programming Problem	143
Linear Programs and Their Duals	145
Solving Linear Programs	146
The Economic Interpretation of the Dual of a Linear Programming Problem	156
A Closer Look at the Character of an Optimal Solution	157
*Uncertainty and the Solution of Linear Programs	157
Summary	158
Questions for Study or Class Discussion	159
Appendix	159

<i>Stopping rule</i>	161
<i>Rules for constructing a new tableau</i>	161
<i>An illustration of the simplex computations</i>	162

**Chapter 9 Market Equilibrium and Price and Production Stability** 168

Introduction	168
<i>Equilibrium and the role of time</i>	168
<i>Partial and general equilibrium</i>	169
<i>The comparative statics method</i>	169
Market Equilibrium: A Numerical Example	169
The Impact of Excise Taxes: An Application of Market Equilibrium Analysis	171
A Comparison of Methods for Solving Gasoline and Energy Shortages: A Second Application	174
Adjustment Paths: The Cobweb Example	176
Stability of Equilibria	178
Information, Uncertainty, and the Concept of Market Equilibrium	182
Summary	183
Questions for Study or Class Discussion	183

**Chapter 10 Pricing and Production Decisions in Pure Competition** 185

Introduction	185
Market Equilibrium in the Market Period	186
Market Equilibrium in the Short Run	186
The Firm's Pricing and Production Decisions in the Short Run	187
Market Equilibrium and the Firm's Pricing and Production Decisions in the Long Run	190
Long-Run Industry Supply	194
Empirical Measures of Supply	198
Agricultural Price Supports and Farm Income: An Application	200
Analyzing the Impact of Profit Taxation	202
*Price Uncertainty and Production Decisions	203
Summary	205
Questions for Study or Class Discussion	205

<b>Chapter 11 Pricing and Production Decisions in Monopoly</b>	<b>207</b>
Introduction	207
Barriers to Entry and the Existence of Monopoly	207
Equilibrium for the Market and the Firm in the Short Run	208
Equilibrium for the Market and the Firm in the Long Run	211
Price Discrimination and Optimal Marketing Strategy	213
Types of Price Discrimination	217
Limits on Price Differentials	219
A Comparison of Purely Competitive and Monopoly Price and Production Decisions	219
A Business Pricing and Investment Example: Peak Load Pricing	222
Regulation of Economic Activity: An Application	225
*Uncertainty and Monopoly Pricing	229
Summary	231
Questions for Study or Class Discussion	231
<b>Chapter 12 Pricing and Production Decisions in a Monopolistically Competitive Market Setting</b>	<b>233</b>
Introduction	233
Equilibrium for the Market and the Firm in the Short Run	234
Equilibrium for the Market and the Firm in the Long Run	235
<i>Short-sighted price cutting</i>	235
<i>Entry or exit</i>	237
<i>Product differentiation and the role of advertising</i>	238
Comparison of Pure Competition and Monopolistic Competition in Long-Run Equilibrium	242
Comparison of Pure Monopoly and Monopolistic Competition in Long-Run Equilibrium	242
Product Characteristics: Some Empirical Examples	243
<i>Washing machines and cameras: an example of product reliability</i>	243
<i>Retail gasoline sales</i>	243
<i>Toothpaste</i>	244
Empirical Estimates of the Cost of Advertising	244
Designing Product Lines for Optimal Price and Quality	245
Summary	246
Questions for Study or Class Discussion	246
<b>Chapter 13 Oligopoly Market Settings</b>	<b>248</b>
Introduction	248

Interdependent Decisions: The Cournot Model	249	
Strategic Policy Reactions	250	
Variants of the Cournot Model	253	
Price and Output Stability: The Kinked Demand Curve		254
Spatial Competition: Optimal Location as a Competitive Strategy	256	
Gaming Strategies	259	
Games with Mixed Strategies	264	
Cartels and Price Leadership	266	
Empirical Evidence on Price Leadership and the Administered Price Thesis	269	
Industrial Concentration, Barriers to Entry, and Profits		271
Uncertain Entry and Strategic Price Policy	272	
Summary	273	
Questions for Study or Class Discussion	273	
<b>Chapter 14 Markets for Inputs to the Productive Process: Perfect Competition</b>		<b>275</b>
Introduction	275	
Short-Run Demand for a Variable Input	276	
<i>Marginal revenue product</i>	277	
<i>Input demand and the stages of production</i>		278
<i>Marginal cost and marginal physical product</i>		279
<i>Value of the marginal product</i>	281	
Long-Run Input Demand	281	
Short-Run and Long-Run Input Demand Elasticity		283
Short-Run and Long-Run Input Supply	283	
Short-Run and Long-Run Input Supply Elasticity	286	
Equilibrium and Disequilibrium in Input Markets	286	
Marginal Productivity and Income Distribution	286	
Unemployment, Welfare Payments, and Incentives to Work:		
Some Problems of Public Policy	287	
Taxing Inputs or Outputs: A Problem in Policy Application		290
Some Empirical Evidence on Returns to Education and Experience	291	
Summary	292	
Questions for Study or Class Discussion	293	
<b>Chapter 15 Markets for Inputs to the Productive Process: Imperfect Competition</b>		<b>294</b>
Introduction	294	
Derived Demand for a Single Variable Input	294	

Derived Demand with Several Variable Inputs	296
Monopsony	297
The Role of Unions	299
Labor Market Adjustments: An Example Drawn from the Supply of Teachers	301
Minimum Wage Legislation: An Example of Policy Impact	302
Rent Controls and Other Price Ceilings	304
Capital Market Imperfections Induced by Income Taxes	305
Summary	306
Questions for Study or Class Discussion	306

**Chapter 16 Investment by the Firm, Capital Budgeting,  
and Financial Markets** 308

Introduction	308
Demand for Capital Goods	308
Evaluating Streams of Profits Over Time	309
Investment Criteria	309
Some Illustrations of Present Value Calculations	312
The Firm's Derived Demand for Capital Goods	314
The User Cost of Capital	315
Empirical Estimates of the User Cost of Capital	316
Interest Rates and the Supply and Demand for Loanable Funds	317
Choosing Depreciation Policy and Evaluating the Benefit of Tax Deductions	319
Decision Rules for Equipment Replacement	320
Alternative Methods of Financing Investment: The Net Cost of Borrowing	323
Financing the Firm: The Problem of Leverage	323
Risk, Return, and Optimal Portfolio Selection	326
Risk and the Valuation of the Firm	328
Summary	329
Questions for Study or Class Discussion	329

**Chapter 17 General Equilibrium** 331

Introduction	331
A Numerical Example of General Equilibrium	332
A Walrasian Description of General Equilibrium	334
A Basic Description of an Economy	336
Feasible Production Choices and Efficient Production	337
Achieving Efficient Productions Through Profit Maximization	342



Feasible Consumption Choices and Efficient Allocation of Outputs	343
Exchange of Commodities: A Contrast Between Barter and a Price and Market System	346
Summary	351
Questions for Study or Class Discussion	352

**Chapter 18 Welfare Economics and Group Choice** 353

Introduction	353
Utility Possibilities	354
Choice Among Utility Possibilities	357
Choosing Prices to Achieve Desired Goals	359
Some Rules for Making Choices	360
Voting as a Group Choice Device	361
Majority Rule and Arrow's Impossibility Theorem	362
Public Goods: An Example of Market Failure	365
Some Other Failures of a Price and Market System	367
<i>Technological externalities</i>	367
<i>Public goods</i>	368
<i>Ownership externalities</i>	368
Summary	368
Questions for Study or Class Discussion	369