## Competition, Collusion, and Game Theory

LESTER G. TELSER

University of Chicago



MACMILLAN

## Contents

Foreword	vi
Acknowledgments	<b>x</b> i
Introduction	xiii
I. APPLICATIONS OF CORE THEORY TO MARKET EXCHANGE	3
1. Introduction	3
2. Consumer Surplus and Transferable Utility	4
3. Some Simple Trading Situations	11
4. m Owners and n Nonowners	19
5. The Basic Core Constraints	28
6. Market Efficiency and Honest Brokers	31
7. Multiunit Trade	37
8. Increasing Returns and Public Goods from the Viewpoint of the Core	
9. A Brief Historical Note	57
Appendix: Consumer Surplus	62
II. FURTHER APPLICATIONS OF CORE THEORY TO MARKET EXCHANGE	68
1. Introduction	68
2. Balanced Collections of Coalitions	70
3. Empty Cores	78
4. The Feasibility of Trade	88
5. Group Rationality with Multiunit Trade	94
6. Competition and Numbers	104
7. The Number of Traders and the Emptiness of the Core	108
8. Conclusions	117
III. APPLICATIONS OF THE CORE TO OLIGOPOLY	119
1. Introduction	119
2. Properties of the Core under Constant Returns	124
3. The Cournot-Nash Theory of Duopoly for Finite Horizons	131
4. The Cournot-Nash Theory of Duopoly for Infinite Horizons	142

xii	Contents
	Contents

<ol> <li>THEORIES OF EXPECTATIONS FOR N COMPETING FIRMS</li> <li>Introduction</li> <li>Expectation Models with Quantity as the Policy Variable</li> <li>Expectation Models for Price as the Policy Variable</li> <li>Summary</li> </ol>	146 146 149 164 172
<ul> <li>V. COMPETITION OR COLLUSION?</li> <li>1. Introduction</li> <li>2. The Nature of Competition and Collusion</li> <li>3. Equilibrium with Product Variety Illustrated for Spatial Competition</li> <li>4. The Costs of Maintaining Collusion</li> <li>5. Sharing the Collusive Return</li> </ul>	175 175 176 176 184 192 206
<ul> <li>VI. THE MONOPOLY AND COURNOT-NASH EQUILIBRIA UNDER DYNAMIC CONDITIONS</li> <li>1. Introduction</li> <li>2. Dynamic Demand Relations</li> <li>3. Some Fundamentals on Optimal Policies</li> <li>4. The Solvability of Certain Linear Equations</li> <li>5. Properties of the Cooperative and Noncooperative Dynamic Equili</li> <li>6. Conclusions</li> </ul>	218 218 221 226 242 bria 250 272
<ul> <li>VII. ESTIMATES OF DEMAND, PRICE POLICY, AND THE RATIO OF PRICE TO MARGINAL COST BY BRAND FOR SELECTED CONSUMER GOODS</li> <li>1. Introduction</li> <li>2. Estimates of the Demand Relation between Market Share and Prices</li> <li>3. Estimates of the Relations among Competing Prices</li> <li>4. Competition in a New Product</li> <li>5. Conclusions</li> </ul>	274 274 es 283 294 299 305
<ol> <li>VIII. Some Determinants of the Returns to Manufacturing Indus</li> <li>1. Introduction</li> <li>2. Description of the Data and Some Simple Summary Statistics</li> <li>3. Multiple Regression Analysis of the Census Data</li> <li>4. An Analysis of Employment Turnover in Selected Manufacturing Industries</li> <li>5. A Brief Survey of Findings by Other Investigators</li> <li>6. Conclusions</li> </ol>	312 316 324 339 352 356
Appendix 1: Estimation of Payrolls, Annual Earnings, and Employment of Nonproduction Workers Appendix 2: Description of the Samples Appendix 3: The Two-Digit Industry Effects Appendix 4: The Relative Size Distribution of Firms	357 359 361 363
References Name Index Subject Index	367 371 372