Contents

	Preface to the third edition—ix
1	The nature and scope of microeconomics 1 A Concepts and methods 1 B The economic and social framework 8
2	The theory of the consumer 11 A The preference ordering 11 B The feasible set 22 C The consumption decision 25 D The comparative statics of consumer behaviour 29 E Offer curves and net demand curves 36 Appendix 1: The lexicographic ordering 41 Appendix 2: Existence of a utility function 43
3	Consumer theory: duality 46 A The expenditure function 46 B The indirect utility function, Roy's identity and the Slutsky equation 52 C Measuring the benefits of price changes 58 D Composite commodities, separability and homotheticity 66
4	Further models of consumer behaviour 71 A Revealed preference 71 B The consumer as a labour supplier 77 C Consumption and the allocation of time 82 D Households 86
5	Production 92 A Introduction 92 B The production function 96 C Variations in scale 101 D Variations in input proportions 105 E The multi-product case 107
6	Cost 111 A Introduction 111 B Long-run cost minimization 114 C Short-run cost minimization 126 D Cost minimization with several plants 135 E Multi-product cost functions 138

	F Labour-managed firms 164
8	The theory of a competitive market 170 A Short-run equilibrium 170 B Stability of equilibrium 175 C Long-run equilibrium 184 D Conclusions 189
9	Monopoly 190 A Introduction 190 B Price and output determination under monopoly C Price discrimination 194 D Monopoly welfare loss 205
10	Input markets 210 A Demand for inputs 210 B Monopsony 216 C Unions as monopoly input suppliers 220 D Bilateral monopoly 223
11	Capital markets 227 A Introduction 227 B Optimal consumption over time 227 C The optimal investment decision 231 D Capital market equilibrium under certainty 240 E Extension to many periods 245
12	General equilibrium 250 A Introduction 250 B Walrasian equilibrium of a competitive economy C Existence of Walrasian equilibrium 254 D Stability of Walrasian equilibrium 260 E Edgeworth exchange theory 266 F Exchange, equilibrium and the core 269
13	Welfare economics 279 A Introduction 279 B Pareto efficient resource allocation 279 C Welfare functions and the Pareto criterion 289

7 Supply and firm objectives 143
 A Long-run profit maximization 144
 B Short-run profit maximization 148
 C The multi-product firm 151

E The entrepreneurial firm 159

D The profit function and comparative statics 154

191

251

	D Pareto efficiency and competitive markets 293 E Distribution and markets 299 F Arrow's impossibility theorem 305
14	Market failure and government failure 314
	A The causes of market failure 314 B Instances of market failure 318 C The theory of the second best 335 D Government action and government failure 340
15	Game theory 346
	A Introduction 346 B Game representation and solutions 348 C Games of imperfect and incomplete information 362 D Mixed strategies 375 E Cooperative bargaining games 377 F Bargaining as a non-cooperative game 385 G Delay and disagreement in bargaining 392
16	Oligopoly 400
	A Introduction 400 B One-shot games 401 C Oligopoly as a repeated game 417 D Entry 433 E Conclusions 444
17	Choice under uncertainty 446
	A Introduction 446 B A formalization of 'uncertainty' 447 C Choice under uncertainty 449 D Properties of the utility function 456 E Risk aversion and indifference curves 466 F Measures of risk 473 G Comparative statics under uncertainty 483
18	Production under uncertainty 491
	A Introduction 491 B Competitive firm under uncertainty 491 C Production with futures markets 503
19	Insurance, risk spreading and pooling 507
	A Introduction 507 B The insurance decision 507

H	i Signalling
20 <i>F</i>	Agency, contract theory and the firm 553
В	A Critique of the classical theory of the firm 553 B Agency theory and the separation of ownership 555 C The moral hazard principal–agent model 568 D The adverse selection principal–agent model 579
21 (General equilibrium under uncertainty and incomplete markets 602
E C E	A Introduction 602 3 Complete markets in state contingent claims 604 5 State-contingent commodities 614 6 Efficiency with production 627 6 The stock market 637 6 Incomplete stock markets 648
Mat	hematical Appendices
E () E F () H I J	A The structure of an optimization problem 657 3 Solutions to optimization problems 660 5 Existence of solutions 670 5 Local and global optima 672 6 Uniqueness of solutions 675 6 Interior and boundary optima 677 6 Location of the optimum: the method of Lagrange 679 6 Concave programming and the Kuhn-Tucker conditions 686 6 Second-order conditions and comparative statics 696 6 The envelope theorem 708 6 Fixed point theorems 710 6 Bayes's rule 712
Refe	erences and further reading 713
Bibl	iography 719

F Asymmetric information in insurance markets: adverse selection 530 G Asymmetric information in insurance markets: moral hazard 540

C Incomplete insurance markets 514

E Risk pooling and diversification 525

Index 727

D Risk spreading: the Arrow-Lind Theorem 520