

WELFARE ECONOMICS AND SOCIAL CHOICE THEORY, 2ND EDITION

ALLAN M. FELDMAN AND ROBERTO SERRANO
Brown University

Kluwer Academic Publishers
Boston/Dordrecht/London

Contents

Preface	xi
Introduction	1
1 The Concerns of Welfare Economics	1
2 The Concerns of Social Choice Theory	4
3 Practical Concerns of Welfare Economics and Social Choice Theory	7
1. PREFERENCES AND UTILITY	11
1 Fundamental Assumptions	11
2 Best Alternatives and Utility Functions	13
3 The Formal Model of Preferences	14
4 Decisions under Uncertainty and Expected Utility	19
5 Introduction to Social Preferences	23
6 Exercises	28
7 Appendix	29
8 Selected References	30
2. BARTER EXCHANGE	33
1 Introduction	33
2 Allocations	34
3 The Edgeworth Box Diagram	36
4 Pareto Optimal Allocations and the Core	37
5 Algebraic Examples	40
6 Final Notes on the Core: The Number of Coalitions	46
7 Exercises	46

8	Selected References	47
3.	WELFARE PROPERTIES OF MARKET EXCHANGE	51
1	Introduction	51
2	The Two-Person, Two-Goods Model	52
3	Competitive Equilibrium in an Exchange Economy: Formal Preliminaries	56
4	The First Fundamental Theorem of Welfare Economics	59
5	The Second Fundamental Theorem of Welfare Economics	63
6	An Algebraic Example	70
7	Exercises	73
8	Selected References	75
4.	WELFARE PROPERTIES OF “JUNGLE” EXCHANGE	79
1	Power as a Basis for Exchange	79
2	A Model of Indivisible Objects	80
3	A 4-Person 4-Houses Example	82
4	Finding a Market Equilibrium with Top Cycles	85
5	Fundamental Theorems of Welfare Economics and Jungle Economics	87
6	Exercises	91
7	Selected References	91
5.	ECONOMIES WITH PRODUCTION	93
1	Introduction	93
2	Optimal Production Plans	96
3	Competitive Equilibrium Production Plans	99
4	The First Fundamental Theorem of Welfare Economics, Production Version	102
5	The Second Fundamental Theorem of Welfare Economics, Production Version	104
6	Extending the Production Model, and Combining Production and Exchange	107
7	An Algebraic Example in a Simple Production Model	111
8	Exercises	113
9	Appendix	114
10	Selected References	115

<i>Contents</i>	vii
6. UNCERTAINTY IN EXCHANGE	119
1 Introduction	119
2 States of the World	120
3 Symmetric Uncertainty	121
4 Examples	128
5 Asymmetric Information	130
6 Exercises	139
7 Selected References	139
7. EXTERNALITIES	143
1 Introduction	143
2 Externalities in an Exchange Economy: An Example	146
3 Pigouvian Taxes and Subsidies: The Exchange Example Continued	150
4 Pigouvian Taxes and Subsidies: A Production Example	153
5 Exercises	157
6 Selected References	158
8. PUBLIC GOODS	161
1 Introduction	161
2 The Public Goods Model	162
3 The Samuelson Public Good Optimality Condition	164
4 Private Financing of the Public Good and the Free Rider Problem:	167
5 The Wicksell-Lindahl Tax Scheme	169
6 Fixed Tax Shares and Majority Voting	174
7 The Demand-Revealing Tax Scheme	176
8 The Groves-Ledyard Tax Scheme	184
9 Exercises	188
10 Selected References	189
9. COMPENSATION CRITERIA	195
1 Introduction	195
2 Notational Preliminaries	196
3 The Pareto Criterion	197
4 The Kaldor Criterion	199
5 The Scitovsky Criterion	201

6	The Samuelson Criterion	202
7	Compensation Criteria in Exchange Economies	204
8	Consumer's Surplus – Money Metrics	206
9	Consumers' Surplus - Boadway Paradox	208
10	Quasilinear Utility	210
11	Cost Benefit Analysis with One Good	213
12	Exercises	214
13	Selected References	215
10.	FAIRNESS AND THE RAWLS CRITERION	217
1	Introduction	217
2	Fairness	218
3	The Rawls Criterion	221
4	Exercises	225
5	Selected References	226
11.	LIFE AND DEATH CHOICES	229
1	Introduction	229
2	Economic Model – The Money Value of a Life	230
3	A Formal Version of the Economic Model	231
4	The Broome Paradox	234
5	Ex-Ante and Ex-Post	235
6	Problems with Utilitarian Measures of Life/Death Choices	238
7	The Pareto Principle and Extended Pareto Principles	243
8	What's Repugnant About the Repugnant Conclusion?	246
9	Conclusions About Life and Death Choices	247
10	Exercises	248
11	Selected References	248
12.	MAJORITY VOTING	253
1	Introduction	253
2	The Majority Voting Criterion	254
3	Majority Voting and Single-Peakedness	256
4	Majority Voting and Single-peakedness: The Multidimensional Case	263
5	Multidimensional Voting – Are the Cycles That Bad?	268

<i>Contents</i>	ix
6 Exercises	270
7 Selected References	271
13. ARROW'S IMPOSSIBILITY THEOREM	275
1 Introduction	275
2 A Simple Model for Arrow's Impossibility Theorem	276
3 Requirements on the Arrow Social Welfare Function	277
4 Applying the Requirements	280
5 Arrow's Impossibility Theorem	282
6 Relaxing the Universality Requirement	287
7 Reactions to Arrow's Impossibility Theorem	287
8 Another Version of Arrow's Theorem	291
9 Exercises	294
10 Selected References	295
14. DOMINANT-STRATEGY IMPLEMENTATION	299
1 Introduction	299
2 Examples of Strategic Manipulation	301
3 The Gibbard-Satterthwaite Impossibility Theorem	305
4 Significance of the Gibbard-Satterthwaite Theorem	312
5 Exercises	314
6 Appendix	316
7 Selected References	317
15. NASH IMPLEMENTATION	321
1 Introduction	321
2 An Example	322
3 Maskin Monotonicity	324
4 Maskin's Theorem	326
5 Comments on Maskin's Theorem	332
6 Limitations of Maskin Monotonicity and Approximate Implementation	333
7 Exercises	337
8 Appendix	339
9 Selected References	341

16. BAYESIAN IMPLEMENTATION	345
1 Introduction	345
2 Asymmetric Information in the Model of Types	346
3 Incentive Compatibility	350
4 From Truthful to Full Implementability	353
5 Bayesian Implementability: Example 3 Continued	356
6 Bayesian Implementability: Theory	357
7 Exercises	359
8 Selected References	359
17. EPILOGUE	363
SOLUTIONS TO EXERCISES	370
Index	399