

Contents



<i>Preface and acknowledgments</i>	x
<i>Foreword to students</i>	xii
1 Introduction	1
1.1 Positive vs. normative analysis	1
1.2 Social interaction and equilibrium	1
1.3 Government and markets	3
1.4 Efficiency	5
1.4.1 The Pareto criterion	5
1.4.2 Pareto efficiency	6
1.4.3 The Pareto criterion and the utility possibilities set	6
1.5 Distributive justice	7
1.5.1 Social welfare functions	7
1.5.2 Expensive and cheap tastes	10
1.5.3 Equality of opportunity	11
1.6 Traditional economic postulates and economic efficiency	12
1.7 A simple model	13
1.7.1 Production and costs	14
1.7.2 Preferences and utility	15
1.7.3 Allocations and efficiency	15
1.8 Quasilinearity and surplus analysis	16
1.8.1 Valuation functions	16
1.8.2 Social surplus	19
1.8.3 Efficiency and the maximization of social surplus	19
1.8.4 The maximization of a social welfare function	20
Appendix 1A A Yes–No good with a continuum of people	21
1A.1 A continuum economy	21
1A.2 Valuations, surplus and efficiency	22
Appendix 1B Game theory	25
Appendix 1C Proof of the equivalence between efficiency and the maximization of surplus	29
Appendix 1D The potential compensation criterion	30
2 Private goods without externalities	31
2.1 Efficiency conditions for private-goods economies without externalities	31

2.2	The utility possibilities frontier	32
2.3	The First Fundamental Theorem of Welfare Economics and market failures	33
2.3.1	The invisible hand and the theorem	33
2.3.2	Market failures	36
2.3.3	Equity, efficiency and public policy	36
2.4	Surplus analysis of competitive markets	37
2.4.1	The First Fundamental Theorem in quasilinear economies	37
2.4.2	Obtaining valuation from demand	38
2.4.3	Aggregate demand and social valuation	40
2.4.4	Social surplus as the area between the aggregate demand and marginal social cost curves	40
2.4.5	The distribution of social surplus into consumer surplus and profits	45
Appendix 2A	The First Fundamental Theorem of Welfare Economics in the continuum economy	49
Appendix 2B	Potential compensation in quasilinear economies	53
3	Externalities	54
3.1	Introduction	54
3.1.1	Concepts	54
3.1.2	Examples of externalities	55
3.1.3	The externality market failure	57
3.2	Unidirectional negative externalities	57
3.2.1	A two-person model	57
3.2.2	Surplus maximization	58
3.2.3	Free-market equilibrium	60
3.2.4	Policy instruments for negative externalities	62
3.2.5	Pigouvian tax	63
3.2.6	Cap and trade	63
3.2.7	Distributional flexibility	64
3.2.8	More than one generator	68
3.2.9	Comparison of policies	70
3.3	Omnidirectional externalities: North and South	70
3.3.1	The model	70
3.3.2	Free-market allocation	71
3.3.3	The nationalistic solution	71
3.3.4	Social (world) surplus	73
3.3.5	Surplus maximization and international fairness	75
3.4	Positive externalities	75

3.5	Emission abatement	76
3.5.1	The upstream–downstream model with abatement	76
3.5.2	Abatement costs	78
3.5.3	The surplus-maximizing solution	78
3.5.4	The free-market allocation and policy approaches	80
3.6	Bargaining	83
3.6.1	Disagreement points	83
3.6.2	The disagreement point when the recipient has no right to clean water	84
3.6.3	The disagreement point when the recipient has the right to clean water	84
3.6.4	Complete bargaining	84
3.6.5	Pigouvian taxes plus complete bargaining	86
Appendix 3A	Omnidirectional externalities in the continuum economy	88
3A.1	The model	88
3A.2	Negative externality: congestion and the tragedy of the commons	88
3A.3	Positive externality: the network	94
Appendix 3B	The so-called Coase theorem	98
3B.1	Statements	98
3B.2	The second best when bargaining is impossible	99
3B.3	Liability for damages	99
4	Public goods	100
4.1	Concepts	100
4.1.1	Nonrivalness	100
4.1.2	Excludability	101
4.1.3	Free disposal	101
4.1.4	Summary	103
4.2	The efficient provision of public goods	103
4.2.1	Feasible states and efficiency	103
4.2.2	Efficiency condition for a Yes–No public good	104
4.2.3	Differentiability and the Samuelson condition	105
4.2.4	Quasilinear preferences and surplus maximization	105
4.2.5	Comparison of the marginal conditions for efficiency in public and private goods	108
4.3	The provision of a public good through the political process	112
4.3.1	Lindahl equilibrium	112

4.3.1.1	The simultaneous determination of provision and financing	112
4.3.1.2	Unanimity and the Lindahl equilibrium	113
4.3.1.3	The Lindahl model	114
4.3.1.4	The efficiency of the Lindahl equilibrium	116
4.3.1.5	Social welfare at the Lindahl equilibrium	117
4.3.2	The provision of a public good under an exogenous financing rule	117
4.3.2.1	Financing rules	117
4.3.2.2	Single-peaked net benefit functions	118
4.3.2.3	Median peaks and the Condorcet theorem	118
4.3.2.4	Multiple peaks and the Condorcet paradox	121
4.3.2.5	One-dimensional political competition and the Hotelling–Downs median voter theorem	123
4.3.2.6	Majority voting and economic efficiency	125
4.4	The provision of a public good by voluntary contributions	127
4.4.1	The voluntary contribution game	127
4.4.2	Equilibrium contributions	128
4.4.3	The inefficiency of the voluntary contributions equilibrium	132
4.4.4	Many identical players	133
4.5	The provision of an excludable public good by charging user fees	133
4.5.1	Efficient pricing	133
4.5.2	Lindahl prices for a continuous public good	134
4.5.3	Access fees for a Yes–No public good	135
	Appendix 4A Public goods in the continuum economy	140
5	Public utilities	142
5.1	Capacity costs and operating costs	142
5.2	Capacity as a continuous variable and peak-load pricing	143
5.2.1	Costs	143
5.2.2	Peak-load pricing under zero operating costs	144
5.2.3	Peak-load pricing under positive operating costs	145
5.3	Capacity as a Yes–No variable and natural monopoly	147
5.3.1	Increasing returns in the production of a private good	147

5.3.2	Uniform and linear prices: the conflict between efficiency and breaking even	150
5.3.3	Two-part tariffs	152
Appendix 5A	Access fees in the continuum economy	158
Appendix 5B	Personalized linear prices and the Ramsey–Boiteux equation	159
6	Uncertainty and asymmetrical information	162
6.1	Decisions under uncertainty	162
6.2	Prices vs. quantities in externality policy	164
6.3	Asymmetrical information and adverse selection	169
6.4	Risk aversion	176
6.5	Efficient risk sharing	180
6.6	Risk-sharing entails <i>ex post</i> redistribution	188
6.7	Actuarial fairness and <i>ex ante</i> redistribution	189
6.8	Asymmetrical information in insurance	190
6.9	Minimal guaranteed insurance	191
6.10	Compulsory insurance	191
	<i>Index</i>	193