

Contents

<i>List of illustrations</i>	page x
<i>List of tables</i>	xii
<i>Preface</i>	xiii
1 Introduction	1
2 The basic cost–benefit (C–B) model	9
2.1 A quick refresher course in micro	9
2.2 Simple general equilibrium C–B rules	13
2.3 Some further results	19
2.4 Public goods and bads	21
2.5 Non-use values	24
2.6 Cross-border externalities	26
2.7 Appendix: further derivations	28
3 Market distortions	31
3.1 Monopoly	31
3.2 Monopsony	33
3.3 Taxes in general equilibrium	34
3.4 The marginal cost of public funds and the excess burden of taxes	39
3.5 Second-best evaluations and optimal taxes	42
3.6 Permit markets	44
3.7 Market imbalances	47
3.7.1 Classical unemployment	47
3.7.2 Keynesian unemployment	49
3.7.3 On the (tiny) empirical evidence	50
3.7.4 Excess demand in a market	52
3.8 Appendix	54

3.8.1	Impact of price changes	54
3.8.2	Labor market constraints	55
4	Intertemporal generalization	56
4.1	Net present values, internal rates of return, and benefit–cost ratios	56
4.2	A brief introduction to optimal control theory	60
4.3	A simple dynamic cost–benefit rule	63
4.4	Social discount rate	65
4.5	On opportunity cost and shadow prices of capital	69
4.6	Timing of an investment	73
4.7	A useful discrete-time model	75
4.8	Appendix: the Inada–Uzawa condition	79
5	Natural resources	80
5.1	Nonrenewable resources	80
5.2	Renewable resources	83
5.3	Forestry	85
5.4	A dynamic CBA rule in the presence of an externality	87
5.5	On second-best solutions	88
6	Small versus large projects	92
6.1	Taylor series approximations	92
6.2	On Marshallian and Hicksian measures of consumer surplus	96
6.3	Large projects and line integrals	97
6.4	A simple illustration of the approach	100
6.5	On the properties of income-compensated measures	103
6.6	On the dangers of benefit transfers	105
6.7	Small might be large	107
6.8	Megaprojects and CGE models	110
6.9	Appendix	114
6.9.1	Line integrals	114
6.9.2	Expenditure functions	116
7	Aggregation	120
7.1	Social welfare functions	120
7.2	A few aggregation rules	122
7.3	Taxation	124
7.4	On practical approaches	127
7.5	On the approach to distribution in three major manuals	131
7.6	Appendix: measurability and comparability of utility	134

8	Appraisal in a risky world	137
8.1	Some simple rules	137
8.2	On the value of flexibility	141
8.3	A simple illustration of the Black–Scholes model	143
8.4	A stochastic cost–benefit rule	145
8.5	The value of preventing a fatality	147
8.6	On the risk of doomsday in CBA	151
8.7	Evaluating disasters. A sketch	154
8.8	Appendix	158
8.8.1	Concavity and quasi-concavity	158
8.8.2	A discrete-time random walk with drift	159
8.8.3	L'Hôpital's rule	159
8.8.4	An illustration of a VPF function	160
9	Notes on estimation techniques	161
9.1	Contingent valuation	162
9.2	Conjoint analysis and discrete choice experiments	166
9.3	The travel-cost model	169
9.4	Hedonic models	173
9.5	Weak complementarity and household production functions	176
9.6	Benefit transfer	179
9.7	Heterogeneity and aggregation	181
9.8	Cost estimation	183
9.9	Appendix: weak complementarity	187
10	A smörgåsbord of further topics	190
10.1	On the empirical discount rate evidence	190
10.2	Wider economic benefits	194
10.3	The current approach versus Drèze–Stern	195
10.4	On behavioral and happiness economics and CBA	198
10.5	CEA/CUA, multi-criteria analysis, and economic impact analysis	201
11	Robustness checks and due diligence in evaluations	205
11.1	Deterministic sensitivity analysis	205
11.2	Risk analysis	207
11.3	Due diligence and evaluations	211
	References	215
	Index	230