

## Contents

<i>Preface and acknowledgments</i>	<i>page</i> xi
<i>Notation</i>	xii

### **PART I: Scope and limitations**

1	Introduction	3
2	Social objectives and direct decision making	8
	2.1 Interpersonal comparisons	11
	2.2 Majority voting	15
	2.3 Bowen model	18
	2.4 Political decentralization	20
3	Market decentralization	25
	3.1 Command economy	26
	3.2 General Lagrangian procedure and the envelope theorem	31
	3.3 Market decentralization	33
	3.4 Extensions to an intertemporal context with uncertainty	36
4	Theory of collective goods	40
	4.1 Typology of collective goods	42
	4.2 Efficient allocation of a collective consumption good	44
	4.3 Classical theory of clubs	47
	4.4 Heterogeneous clubs	52
	4.5 Persistent scale economies in club size	55
	4.6 Spatial clubs	58

### **PART II: Decision making in a mixed economy**

5	Planning mechanisms	65
	5.1 Extended market procedures for nonexcludable goods	65
	5.2 Problem of the common	73
	5.3 Tiebout-type models of club decentralization	77
	5.4 Decentralizing spatial clubs: Henry George theorem	83
	5.5 General mechanism design	85

viii	<b>Contents</b>	
6	Models of a mixed economy	90
6.1	Static model	91
6.2	Intertemporal considerations	95
6.3	Uncertainty and missing markets	100
7	Government budgeting and fiscal decentralization	104
7.1	Unified government budget	105
7.2	Impact of intergenerational (and other) governmental transfers	109
7.3	Capital account for government	112
7.4	Problems in budget coordination	113
7.5	Fiscal federalism	115
8	Public pricing and optimal-commodity taxation	120
8.1	Optimal public pricing	120
8.2	Diamond–Mirrlees optimal-commodity-tax framework	124
8.3	Full-commodity-tax discretion	128
8.4	Limitations on tax discretion	133
8.5	Broadly based taxes	135
8.6	Practical problems with uniform tax systems	140
8.7	Distributional concerns	141
<b>PART III: First-order project analysis</b>		
9	Decompositions and general theory of second best	145
9.1	Diamond–Mirrlees framework	146
9.2	Intermediate-goods taxation and quantity constraints	151
9.3	Nonlinear taxes	156
9.4	Practical rules and pitfalls of benefit–cost analysis	158
10	Principles of shadow pricing	161
10.1	Categories of shadow prices	162
10.2	Formulas based on second-best decomposition	164
10.3	Case of tradeable goods	167
10.4	Formulas based on optimal taxation	168
10.5	General expressions for marginal cost of government spending	172
11	Local public goods	175
11.1	Direct taxation	176
11.2	Local commodity taxes	184
11.3	Biases in club choice	186

<b>Contents</b>	<b>ix</b>
12 Intertemporal contexts with uncertainty	191
12.1 Temporal rate of discount	191
12.2 Uncertainty: bare-bones model	195
12.3 Risk premiums in the Diamond–Dreze model	198
12.4 Model with full sequential structure	203
12.5 Project analysis with uncertainty and incomplete markets	210
13 Identifying shadow values: hedonic methods and capitalization	212
13.1 Identification based on spanning	213
13.2 Identification with similar agents	216
13.3 Relationships between hedonic methods and capitalization	218
13.4 Internal capitalization	219
13.5 External capitalization	225
13.6 Comparison and perspective on capitalization measures	227
 <b>PART IV: Evaluating large projects</b>	
14 Search for exact measures	233
14.1 Marginal analysis in presence of nonconvexity	234
14.2 Compensating variation in a market context	236
14.3 Measures for a mixed economy	243
14.4 Uncertainty and expected surplus	244
15 Surplus approximations	246
15.1 Second-order approximations of individual utility	247
15.2 Aggregation of second-order measures	249
15.3 Second-order measures for a mixed economy	253
15.4 Upper and lower bounds	254
15.5 Direct use of naive surplus	258
16 Practical methods for large-project evaluation	260
16.1 Recovering willingness to pay for collective goods	261
16.2 Parametric econometric identification	264
16.3 Groves–Clarke mechanism	268
16.4 Commonly used framework	272
16.5 Project interactions and concept of alternative cost	273
17 Peak-load problem	277
17.1 General welfare problem	278

x	<b>Contents</b>	
	17.2 Peak-load phase	280
	17.3 Optimal capacity for single project	283
	17.4 Optimal timing of recursive investments	285
	<i>Epilog</i>	293
	<i>References</i>	294
	<i>Author index</i>	307
	<i>Subject index</i>	310