

## Table of Contents

<b>1 The Theory of Fuzzy Optimal and Approximate Social Prices .....</b>	<b>1</b>
1.1 The Concept of Price .....	2
1.2 The Point of Entry: The Problem of Prices in Cost-Benefit Analysis Microeconomics Defined .....	7
1.3 The Nature of Efficient Prices .....	10
1.4 Revealed Preference Method (RPM) for Social Price Computation .....	13
1.4.1 Social Pricing When Demand and Supply Functions are known. ....	15
1.4.2 Social Pricing and Contingent Valuation Method. ....	18
1.4.3 Social Pricing and the Theory of Fuzzy Prices.....	20
<b>2 The Theory of Optimal Social Discount Rate.....</b>	<b>55</b>
2.1 A Reflection on Traditional Framework.....	57
2.2 Prelude to the Construction of Social Rate of Time Discount under Fuzzy Logic. ....	64
2.3 Decision-Time, Benefit Time and Cost Time in a Fuzzy Environ- ment .....	66
2.4 The Construction of Individual Optimal Rate of Fuzzy Social Dis- count .....	69
2.5 From the Individual Rates of Time Discount to the Social Rate of Discount.....	74
2.5.1 All Individual Preferences Count .....	76
2.5.2 Only the Preference of a Dictator Counts.....	78
2.5.3 Only the Preferences of Either the Ruling or Decisive Class Count .....	78
2.6 An Example of a Solution to the Decision Problem of the Fuzzy Social Discount Rate .....	81
2.7 Reflections on the Fuzzy-Theoretic Framework for Computable So- cial Discount Rate.....	86
2.8 Conclusion.....	89
2.9 A Construction and the Properties of a Pure Time Set, $\mathbb{T}$ .....	90

<b>3 The Theoretical Structure of Cost-Benefit Criteria, Choice of Project and Discounting Process .....</b>	<b>95</b>
3.1 The Cost-Benefit Space .....	96
3.2 Differences of <i>K</i> -Measures and the Problems of Choice-Criterion .....	102
3.2.1 Cost-Benefit Difference ( <i>Static</i> ).....	102
3.2.2 The Ratio Criteria ( <i>Static</i> ) .....	105
3.3 Similarities and Differences in the Criteria .....	108
3.4 The Present-Value ( <i>Dynamic</i> ) Criteria in a Discrete Process.....	109
3.5 Present Value ( <i>Dynamic</i> ) Criterion in a Continuous Process .....	114
3.6 Cost-Benefit Criterion with Different Discount Rates for Costs and Benefits.....	117
3.7 The Optimal Selection Rule .....	119
<b>4 The Theory of Fuzzy Present Value (FPV).....</b>	<b>123</b>
4.1 Fuzzy Computing of Present Value.....	124
4.2 The Relationships Between the Fuzzy Present Value (FPV) and Ordinary Present Value (OPV).....	134
4.3 Reflections on Trapezoidal Fuzzy Discount Rates, FPV and Fuzzy Future Values.....	143
<b>5 The Theory of Fuzzy Decisions, Optimal Taxation and Cost-Benefit     Distribution .....</b>	<b>147</b>
5.1 Concepts of Social Cost and Payment .....	148
5.1.1 General Background of Payment Distributional Weights ....	150
5.1.2 Distributive Weights, Fuzzy Computing and Combination of Judgments .....	151
5.2 The Ability-to-Pay Equity Norm and Fuzzy Equilibrium Weights.....	152
5.2.1 Notations.....	153
5.2.2 Independent Evaluation and Cost Payment Distribution Con- struct .....	156
5.2.3 Inter-dependent Evaluation and Cost Payment Distribution Construct .....	159
5.2.4 Weighted Evaluation and Cost Payment Distribution Construct .....	160
5.3 The Benefit-Received Equity Norm .....	169
5.4 Generalized Norm of Equity.....	172
5.5 Summing-up .....	173
5.6 Computational Example of the Social-Cost Payment Proportions	175
5.7 A Note on Cost Distribution Principle as Applied to Mechanical Systems .....	187

---

<b>6 Toward a Theory of Social Goals and Objective Formation in Cost-Benefit Analysis.....</b>	<b>193</b>
6.1 Social Goals And Objectives in Cost-Benefit Analysis.....	193
6.2. Morphology of Social Objectives and Goals .....	196
6.2.1 A Shopping List of Social Objectives. ....	197
6.2.2. Morphology of Relations on Objective Set. ....	200
6.3. Constructing the Admissible Social Objective Set by the Method of Fuzzy Restriction .....	204
6.4 Creation and Protection of Social Goals and Objectives.....	217
6.4.1. Institutional Structures, Social Objective Set and Decision Foundations .....	217
6.4.2 Cost-Benefit of Creating of Social Goals and Objectives in a Democratic Social Formation.....	228
6.4.3 Costs and Benefits of Protection of Social Goals and Objectives .....	231
6.4.4 Rent-Seeking, Rent-Creation and Rent-Protection in Social Goal-Objective Formations .....	234
6.5 The Theory of Fuzzy Decisions, Rent-Seeking and Social-Objective Formation.....	238
6.5.1 Fuzzy Rationality and Value Computation.....	238
6.5.2 Political Markets and the Fuzzy Phenomenon.....	239
6.5.3 Rent Seeking as a Fuzzy-Decision Process .....	241
6.5.4 Fuzzy Decisions and Equilibrium in Political Markets and Choice of Project .....	242
<b>References.....</b>	<b>243</b>
On Aggregation, Distributional Weights, and Rankings .....	243
On Economic Analysis, Benefits and Benefit Accounting .....	249
On Economic Analysis, Costs and Costing .....	253
On Accounting Theory .....	257
On Economic Analysis, Cost-Benefit, and Investment Criteria I.....	258
On Economic Analysis, Cost-Benefit and Investment Criteria II.....	261
On Economic Analysis, Shadow Prices and Efficient Pricing .....	263
On Economic Analysis and Social Rate of Discount .....	270
On Economics and Social Choice.....	274
On Economic and General Cost-Benefit Analysis: Contingent Valuation Method (CVM).....	286
On Economic and General Cost-Benefit Analysis: Revealed Preference Approach (RPA) .....	291
On Fuzzy Decisions .....	295
On Fuzzy Decisions and some Applications .....	306
On Fuzzy Decisions, Risks, Games and Economic Analysis .....	313

xvi    **Table of Contents**

---

On Fuzzy Logic .....	319
On Fuzzy Mathematical Programming and the Theory of Fuzzy Optimization .....	323
On Fuzzy Mathematics.....	328
On Fuzzy Probability, Possibility and Statistics.....	337
<b>Index .....</b>	<b>341</b>