TABLE OF CONTENTS

Introduction 8

1. Private Choice and Public Choice 11
1.1 Why Public Choice? 11
1.1.1 Economics is about the choice 11
1.1.2 Weakness of the concept of Pareto optimality 11
1.1.3 Market failures 12
1.1.4 Public choice 13
1.1.5 A bit of history 14
1.2 Basic Topics of Public Choice 14
1.2.1 Voting 14
1.2.2 Power 16
1.3 Problems and Exercises 17
1.4 Comments 17

2. Public Choice and Welfare Economics 19
2.1 A Simplified Model of an Exchange Economy 19
2.1.1 Allocations 19
2.1.2 Optimality 20
2.1.3 Market exchange and competitive equilibrium 23
2.2 Fundamental Theorems of Welfare Economics 24
2.2.1 The First fundamental theorem, properties of competitive equilibria 24
2.2.2 The Second fundamental theorem, market governed redistribution 27
2.3 Problems and Exercises 28
2.4 Comments 30

3. Choice Functions and Voting Procedures 31
3.1 Choice Situations and Choice Functions 31
3.1.1 The set of alternatives 31
3.1.2 Individuals and information 31
3.1.3 Choice situations 32
3.1.4 Choice functions 32
3.2 Preference Profiles 35
3.3 Voting Situations, Social Choice Functions and Voting Procedures 37
3.4 Problems and Exercises 40
3.5 Comments 40

4. Axioms of Democratic Voting Procedures 41
4.1 Universal Admissibility 41
4.2 Anonymity 41
4.3 Neutrality 42
4.4 Positive Responsiveness 43
4.5 Problems and Exercises 45
4.6 Comments 45

5. Majority Voting 46
5.1 Majority Rule 46
5.2 Condorcet's Voting Procedure 47
5.3 Problems with Majority Rule 48
5.4 Single-peakedness of Preference Profiles and Black's Theorem 52
5.5 Problems and Exercises 58
5.6 Comments 59

6. Arrow's Impossibility Theorem 60
6.1 Arrow's Axioms 60
6.2 Arrow's Theorem 63
6.3 Simple Proof of Arrow's Theorem 64
6.4 Implications 70
6.5 Problems and Exercises 70
6.6 Comments 71

7. Looking for Reasonable Voting Procedures 72
7.1 An Effective Extension of Majority Rule 72
7.2 Plurality Voting Procedures 72
7.2.1 Simple plurality 73
7.2.2 Plurality with a run-off 74
7.2.3 Plurality elimination procedures 75
7.3 Approval Voting Procedures 77
7.4 Borda's Voting Procedure 78
7.5 Voting Procedures that are Effective Extensions of Majority Rule 79
7.5.1 Black's procedure 79
7.5.2 Maxmin voting procedure 80
7.5.3 Copeland's procedure 81
7.5.4 Nanson's procedure 82
7.6 Problems and Exercises 83
7.7 Comments 84

8. Strategic Behaviour and Manipulation 86
8.1 Strategic Behaviour 86
8.2 The Gibbard-Satterthwaite Theorem 89
8.3 Proof of the Gibbard-Satterthwaite Theorem 93
8.4 Implications 98
8.5 Problems and Exercises 98
8.6 Comments 100

9. Voting as an Optimal Choice 101
9.1 The Model of an Individual Voter's Decision Making 101
9.1.1 Voting constraint 101
9.1.2 Optimal choice 103
9.2 Portfolio Voting 105
9.3 Distance Games 106

9.4 Nash Equilibrium and Kuhn-Tucker Conditions for Equilibrium Points 108
9.5 Problems and Exercises 112
9.6 Comments 112

10. Voting Power 113
10.1 Intuitive Concepts of Power 113
10.2 Voting in Blocs 117
10.3 Committee with a Presidium 123
10.4 Multi-cameral Committees 125
10.5 Weghted Voting Bodies 127
10.6 Problems and Exercises 134
10.7 Comments 135

11. General Properties of Power Indices 136
11.1 Power in Committees 136
11.2 Axiomatization of Power 137
11.3 Marginality 139
11.4 Most Frequently Used Power Indices 145
11.5 Properties of Power Indices 153
11.6 Problems and Exercises 157
11.7 Comments 157

12. Paradoxes of Power and Constrained Power Indices 160
12.1 Paradoxes of Power 160
12.1.1 Paradox of redistribution 160
12.1.2 Paradox of new members 161
12.1.3 Paradox of quarrelling members 161
12.1.4 Paradox of a treshold 162
12.2 Constrained Power Indices 162
12.3 A Priori Unions 163
12.4 Problems and Exercises 168
12.5 Comments 169

Bibliography 170

Author Index 181

Subject Index 183