

Contents

1.	Introduction: Reasons for Writing this Book, a Decision Theory Approach.....	3
1.1.	Introduction	3
1.2.	Why the Structure of This Book – a Decision Theory Approach	13
2.	Nonlinear Models for the Labour Market.....	23
2.1.	Introduction	23
2.2.	Nonlinear Models and Examples for the Labour Market	24
2.3.	Conclusion	30
3.	Second Order Effects in Population Migration.....	33
3.1.	Nonlinear Migration Behaviour	33
3.2.	Cases of Reverse Migration	35
3.3.	A (Not So) Simple Model	35
3.4.	Results	39
3.5.	Conclusion	41
4.	Cities: Reactors for Economic Transactions.....	45
4.1.	Transaction Environment	45
4.2.	Diffusion Equation	47
4.3.	The Reflector (Albedo)	56
4.4.	Decrease in Income	58
4.5.	Dynamic Evolution Equation	60
4.6.	Conclusion	62
	Annex 4.1	62
A.4.1.	The Coefficient K	62
5.	Considerations on the Reform in the Power Sector (Avoiding Chaos in the Path to an Optimal Market Structure)	71
5.1.	Introduction	71
5.2.	From Power Sector to Power Market	73
5.3.	Non-linear Effects in Market Penetration	81

5.4. Conclusion	86
Appendix 5.1	87
6. A Model of Non-linear Dynamics in the Implementation of Decisions for the Evolution of Energy Technologies	93
6.1. Introduction	93
6.2. Description of the Model	94
6.3. Criteria for Energy Development Strategies	100
6.4. An Energy Planner's Perception of Risks and Benefits	102
6.5. Numerical Examples	104
6.6. Energy Policy and Technological Profile	106
6.7. Perception of Alternatives and Strategic Conduct	107
7. Non-linear Effects in Knowledge Production.....	111
7.1. Implementation of New Technologies	112
7.2. Essentials of Chaotic Behaviour	115
7.3. Complex Cyclical Patterns	116
7.4. The Industrial Production and the Production of Technologies	116
7.5. Measuring Technological Information and Entropy	121
7.6. Conclusion	124
8. Institutional Structures as Benard–Taylor Processes	129
8.1. Epistemic Sense and Ontological Sense	129
8.2. Social Reality and Collective Behaviour	129
8.3. Dynamics of Memes	130
8.4. Conclusion	135
9. Oscillatory Processes in Economic Systems.....	141
9.1. Cycles in Dynamics of Economic Systems	141
9.2. Optimality Conditions and Associated Equations	143
9.3. Production Potential and Quantization	145
9.4. Oscillatory Behaviour – Some Numerical Results	148
9.5. Conclusion	150
Appendix 9.1. Second-order Systems	150
10. Final Thoughts on a Different Way of Looking at Economic Processes	155
General References	159
Index	167