

# Contents

Foreword	5
Acknowledgements	8
Correlation of worldwide markets' entropies José A.O. Matos; Sílvia M.A. Gama, Heather J. Ruskin, Adel Sharkasi, Martin Crane	9
Entropic information theory applied to uncertainty in financial markets Andreia Dionísio, Rui Menezes and Diana A. Mendes	23
Nearly recombining processes and option pricing. I.P.van den Berg	35
Stochastic volatility Rui Vilela Mendes	57
Self-organized criticality in economy C. Correia Ramos, Nuno Martins, Ricardo Severino and J. Sousa Ramos	75
Asymmetric signals in econophysics modeling: dynamic volatility and threshold adjustment models Rui Menezes, Nuno B. Ferreira and Diana A. Mendes	87
Chaotic behavior in an economic model Clara Grácio, Cristina Januário and J. Sousa Ramos	99
Complex Behavior of Stock Markets: Processes of Synchronization and Desynchronization during Crises Tanya Araújo and Francisco Louçã	111
Economic Growth in a Closed Finite World Rui Namorado Rosa	127
Exergy based analysis of economic sustainability A. Heitor Reis	147