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Production Function; 1.6.2 Entropy of Commodity Distribution; 1.6.3 Entropy of Capital Distribution
 1.6.4 Entropy of Production 1.6.5 Summary of Entropy; 1.7 Mechanism of Production and Trade; 1.7.1 The Carnot Process; 1.7.2 The Origin of Growth and Wealth; 1.7.3 World Trade Mechanism; 1.7.4 Returns; 1.8 Dynamics of Production: Economic Growth; 1.8.1 Two Interdependent Systems: Industry and Households; 1.8.2 Linear and Exponential Growth (0 1); 1.9 Conclusion; References; 2 Zero-intelligence Models of Limit-order Markets; 2.1 Introduction
 2.2 Possible Zero-intelligence Models 2.3 Data Analysis and Empirical Facts Regarding Statics; 2.4 Dynamics: Processes, Rates, and Relationships; 2.5 Resulting Model; 2.6 Results from the Model; 2.7 Analytic Studies: Introduction and Mean-field Approach; 2.8 Random-walk Analyses; 2.9 Independent Interval Approximation; 2.10 Concluding Discussion; References; 3 Understanding and Managing the Future Evolution of a Competitive Multi-agent Population; 3.1 Introduction; 3.2 A Game of Two Dice; 3.3 Formal Description of the System's Evolution; 3.4 Binary Agent Resource System
 3.5 Natural Evolution: No System Management 3.6 Evolution Management via Perturbations to Population's Composition; 3.7 Reducing the Future-Cast Formalism; 3.8 Concluding Remarks and Discussion; References; 4 Growth of Firms and Networks; 4.1 Introduction; 4.2 Growth of Firms; 4.2.1 Dataset of European Firms; 4.2.2 Pareto-Zipf's Law for Distribution; 4.2.3 Gibrat's Law for Growth; 4.2.4 Detailed Balance; 4.3 Pareto-Zipf and Gibrat under Detailed Balance; 4.3.1 Kinematics; 4.3.2 Growth of Firms and Universality of Zipf's Law; 4.4 Small and Mid-sized Firms
 4.4.1 Data for Small and Mid-sized Firms

Sommario/riassunto

Using tricks to handle coupled nonlinear dynamical many-body systems, several advancements have already been made in understanding the behavior of markets/economic/social systems and their dynamics. The book intends to provide the reader with updated reviews on such major developments in both econophysics and sociophysics, by leading experts in the respective fields. This is the first book providing a panoramic view of these developments in the last decade.
