1. Record Nr. UNINA9910783061403321

Autore	Aoki Masanao
Titolo	Modeling aggregate behavior and fluctuations in economics : stochastic views of interacting agents / / Masanao Aoki [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2002
ISBN	1-107-12030-6 1-280-15912-X 0-511-11865-1 0-511-01878-9 0-511-15665-0 0-511-32934-2 0-511-51064-0 0-511-04599-9
Descrizione fisica	1 online resource (xv, 263 pages) : digital, PDF file(s)
Disciplina	338.5/212
Soggetti	Demand (Economic theory) - Mathematical models Supply and demand - Mathematical models Consumption (Economics) - Mathematical models Business cycles - Mathematical models Statics and dynamics (Social sciences) - Mathematical models Stochastic processes - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references (p. 245-252) and indexes.
Nota di contenuto	Our Objectives and Approaches -- Partial List of Applications -- States: Vectors of Fractions of Types and Partition Vectors -- Vectors of Fractions -- Partition Vectors -- Jump Markov Processes -- The Master Equation -- Decomposable Random Combinatorial Structures -- Sizes and Limit Behavior of Large Fractions -- Setting Up Dynamic Models -- Two Kinds of State Vectors -- Empirical Distributions -- Exchangeable Random Sequences -- Partition Exchangeability -- Transition Rates -- Detailed-Balance Conditions and Stationary Distributions -- The Master Equation -- Continuous-Time Dynamics -- Power-Series Expansion -- Aggregate Dynamics and Fokker-Planck Equation -- Discrete-Time

Dynamics -- Introductory Simple and Simplified Models -- A Two-Sector Model of Fluctuations -- Closed Binary Choice Models -- A Polya Distribution Model -- Open Binary Models -- Two Logistic Process Models -- Model 1: The Aggregate Dynamics and Associated Fluctuations -- Model 2: Nonlinear Exit Rate -- A Nonstationary Polya Model -- An Example: A Deterministic Analysis of Nonlinear Effects May Mislead! -- Aggregate Dynamics and Fluctuations of Simple Models -- Dynamics of Binary Choice Models -- Dynamics for the Aggregate Variable -- Potentials -- Critical Points and Hazard Function -- Multiplicity--An Aspect of Random Combinatorial Features -- Evaluating Alternatives -- Representation of Relative Merits of Alternatives -- Value Functions -- Extreme Distributions and Gibbs Distributions -- Type I: Extreme Distribution.

Sommario/riassunto

This book has two components: stochastic dynamics and stochastic random combinatorial analysis. The first discusses evolving patterns of interactions of a large but finite number of agents of several types. Changes of agent types or their choices or decisions over time are formulated as jump Markov processes with suitably specified transition rates: optimisations by agents make these rates generally endogenous. Probabilistic equilibrium selection rules are also discussed, together with the distributions of relative sizes of the bases of attraction. As the number of agents approaches infinity, we recover deterministic macroeconomic relations of more conventional economic models. The second component analyses how agents form clusters of various sizes. This has applications for discussing sizes or shares of markets by various agents which involve some combinatorial analysis patterned after the population genetics literature. These are shown to be relevant to distributions of returns to assets, volatility of returns, and power laws.