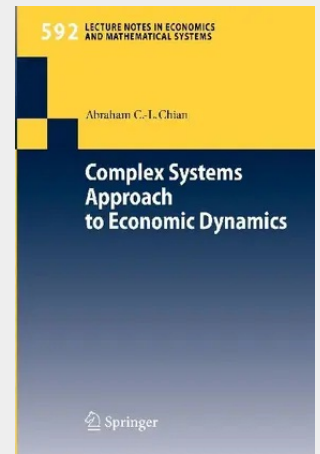


Complex Systems Approach to Economic Dynamics

Economic Systems exhibit complex dynamics evidenced by large-amplitude and aperiodic fluctuations in economic variables, such as foreign exchange rates and stock market prices, indicating that these systems are driven far from the equilibrium. Characterization of the complex behavior of economic cycles, by identifying regular and irregular patterns and regime switching in economic time series, is the key for pattern recognition and forecasting of economic cycles. Statistical analysis of stock markets and foreign exchange markets has demonstrated the intermittent nature of economic time series. A nonlinear model of business cycles is able to simulate intermittency arising from order-chaos and chaos-chaos transitions. This monograph introduces new concepts of unstable periodic orbits and chaotic saddles which are unstable structures embedded in a chaotic attractor, responsible for economic intermittency.

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