

Dynamical analysis of two-phase phenomena in financial markets

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Abstract

We investigate the dynamical analysis of two-phase behavior in Korean exchange market. In order to discuss two-phase phenomena for the heavy tailed behavior of the distribution of returns, we examine the real data such as KTB futures with the shuffled and the Brownian processes. In addition, we show whether the volatility clustering plays a key role in the equilibrium and non-equilibrium states of financial markets. It is obtained that the two-phase behavior is basically resulted from the heavy-tailed behavior of the distribution of returns. The importance of inverse statistics from two-phase behavior can be also confirmed numerically via the simulation. Particularly, we find the probability distribution of the first passage time that follows either a power-law distribution or a distribution having an optimal value, and our result is compared to other calculated findings.

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