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Dynamical Herd Behaviors in the Yen-Dollar Exchange Rate
KYUNGSIK KIM, SEONG-MIN YOON, Division of Economics, Pukyong National University, Pusan 608-737, Korea, C. CHRISTOPHER LEE, Department of Business Administration, Central Washington University, WA 98926, USA — We study the phase transition of dynamical herd behaviors for the yen-dollar exchange rate in the Japanese financial market. It is obtained that the probability distribution of returns satisfies the power-law behavior $P(R) \simeq R^{-\alpha}$ with three different values of the scaling exponent $\alpha = 3.11$ (one time lag $\Delta t = 1$ minute), 2.81 (30 minutes), and 2.29 (1 hour). The crash regime in which the probability density increases with the increasing return appears in the case of $\Delta t < 30$ minutes, while it occurs no financial crash at $\Delta t > 30$ minutes. it is especially obtained that our dynamical herd behavior exhibits the phase transition at one time lag $\Delta t = 30$ minutes.

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