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Po-Keng Cheng*, Math Tower B-148, Stony Brook University, Stony Brook, NY 11794, and
Frank J. Fabozzi and **Stoyan Stoyanov**. *Transitions among States behind Interactive Agent Model*.

In this paper, we introduce a simple heterogeneous agent mechanism, where the distribution of returns generated from the mechanism match stylized facts in financial markets. We introduce one more key factor, the length of evaluations on performances between strategies, which also has a significant influence on price fluctuations. To investigate the transitions among states, we introduce a Markov transition matrix, Perron-Frobenius transition matrix, and Inertia. Our results show the stickiness of states switching from one to another, and the longer length of performance evaluations would generate more complex dynamic price fluctuations. We link our simple heterogeneous agent mechanism with Markov trajectory entropy and provide a total score and probability density functions of representations under two states as applications for the mechanism. (Received September 15, 2016)