The Impact of Imitation on Long Memory in an Order-Driven Market

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Notes

1. We are grateful to four anonymous referees who provided useful suggestions and feedback. Barkley Rosser provided useful comments on the authors' earlier work that inspired the research questions addressed in this paper.

2. See LeBaron [2001b] for an example of how endogenously changing heterogeneity in investor strategies can impact observed market behavior.

0.5 to 1.5 from our original value of 1. We have also varied σ_2 the chartist forecasting component from 1 to 2 from the original value of 1.5, and the noise standard deviation, σ_n, from 0.3 to 0.7 from our original value of 0.5. Finally, we have adjusted k_{max}, the spread parameter length from 0.3 to 0.7. In all these cases we find that our results do no change significantly.

6. See Vriend [2000] for a general discussion.

7. It is beyond the scope of this paper to discuss long-memory processes. Interested readers should consult some recent surveys which include Baillie [1996], Robinson [2003], and Doukhan et al. [2003]. See also Parke [1999] for examples, intuition and discussion. Recent work in finance shows that volatility is a likely candidate for long memory even at longer horizons than

References

Andersen, Torben G., Tim Bollerslev, Francis X. Diebold, and Paul Labys . 2003. Modeling and Forecasting Realized Volatility. Econometrica, 96: 579–625.

Article Google Scholar

Arthur, W.Brian, John Holland, Blake LeBaron, Richard Palmer, and Paul Tayler . 1997. Asset Pricing Under Endogenous Expectations in an Artificial Stock Market, in The Economy as an Evolving Complex System II, edited by W. Brian Arthur, Steven N. Durlauf, and David A. Lane, Reading, MA: Addison-Wesley, 15–44.

Google Scholar

Article Google Scholar

Chiarella, Carl, and Giulia Iori . 2002. A Simulation Analysis of the Microstructure of Double Auction Markets. Quantitative Finance, 2: 346–353.

Article Google Scholar

Chiarella, Carl, Giulia Iori, and Josep Perello . 2004. The Impact of Heterogeneous Trading Rules on the Limit Order Book and Order Flows, Technical Report, Department of Economics, City University London.

Cohen, Kalman J., Steven F. Maier, Robert A. Schwartz, and David K. Whitcomb . 1983. A Simulation Model of Stock Exchange Trading. Simulation, 41: 181–191.

Zero Intelligence Models in Financial Markets. Proceedings of the National Academy of Sciences of the United States of America, 102: 2254–2259.

Article Google Scholar

Giraitis, Liudas, Piotr Kokosza, Remigijus Leypus, and Gilles Teyssiere . 2003a. Rescaled Variance and Related Tests for Long Memory in Volatility and Levels. Journal of Econometrics, 112: 265–294.

Article Google Scholar

Giraitis, Liudas, Piotr Kokosza, Remigijus Leypus, and Gilles Teyssiere . 2003b. On the Power of R/S Type Tests Under Contiguous and Semi-long Memory Aternatives. Acata Applicandae Mathematicae, 78: 285–299.

Ladley, Dan, and Klaus R. Schenk-Hoppe . 2007. Do Stylized Facts of Order Book Markets Need Strategic Behavior, Technical Report, University of Leads.

LeBaron, Blake . 2001a. Evolution and Time Horizons in an Agent Based Stock Market. Macroeconomic Dynamics, 5 (2): 225–254.

Article Google Scholar

LeBaron, Blake . 2001b. Financial Market Efficiency in a Coevolutionary Environment, in Proceedings of the Workshop Simulation of Social Agents: Architectures and Institutions, edited by David Sallach and Thomas Wolsko, Argonne National Laboratories, Argonne, IL: pp. 33–51.

Google Scholar

Mike, Szabolcs, and J.Doyne Farmer . 2008. An Empirical Behavioral Model of Liquidity and Volatility. Journal of Economic Dynamics and Control, 32: 200–234.

Article Google Scholar

Parke, William R . 1999. What is Fractional Integration? Review of Economics and Statistics, 81 (4): 632–638.

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Robinson, Peter M . 1978. Statistical Inference for a Ranom Coefficient Autoregressive Model. Scandanavian Journal of Statistics, 5: 163–168.

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