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Econophysics review: II. Agent-based models

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Abstract

This article is the second part of a review of recent empirical and theoretical developments usually grouped under the heading Econophysics. In the first part, we reviewed the statistical properties of financial time series, the statistics exhibited in order books and discussed some studies of correlations of asset prices and returns. This second part deals with models in Econophysics from the point of view of agent-based modeling. Of the large number of multi-agent-based models, we have identified three representative areas. First, using previous work originally presented in the fields of behavioral finance and market microstructure theory, econophysicists have developed agent-based models of order-driven markets that we discuss extensively here. Second, kinetic theory models designed to explain certain empirical facts concerning wealth

distribution are reviewed. Third, we briefly summarize game theory models by reviewing the now classic minority game and related problems.

Keywords:

Econophysics | Financial time series | Correlation | Agent based modelling

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Notes

†Security Exchange Commission.

†Computer Assisted Trading System.

†National Market System.

‡Markets in Financial Instruments Directive.

†Encyclopædia Britannica. Retrieved 17 June 2010 from Encyclopædia Britannica Online.

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