Quantitative Finance > Trading and Market Microstructure

Reverse Engineering Financial Markets with Majority and Minority Games using Genetic Algorithms

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(Submitted on 10 Feb 2010)

Using virtual stock markets with artificial interacting software investors, aka agent-based models (ABMs), we present a method to reverse engineer real-world financial time series. We model financial markets as made of a large number of interacting boundedly rational agents. By optimizing the similarity between the actual data and that generated by the reconstructed virtual stock market, we obtain parameters and strategies, which reveal some of the inner workings of the target stock market. We validate our approach by out-of-sample predictions of directional moves of the Nasdaq Composite Index.

Comments:	14 pages, 2 figures
Subjects:	**Trading and Market Microstructure (q-fin.TR)**; Learning (cs.LG); Multiagent Systems (cs.MA)
Cite as:	**arXiv:1002.2171v1 [q-fin.TR]**

Submission history

From: Judith Wiesinger [view email]

[v1] Wed, 10 Feb 2010 18:48:43 GMT (87kb,D)

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