论文

基于复杂网络少数者博弈模型的金融市场仿真研究

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Modeling and simulation of complex finance networks based on minority game

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- 摘要
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摘要 本文构造了具有学习机制、学习结构及时间控制策略(持续期策略)的复杂金融网络少数者博弈模型. 基于少数者博弈模型, 以网络学习作为Agent的主要学习机制, 基于随机网络、小世界网络及无标度网络三种网络, 分别对应金融市场中全局信息下的投资者随机决策, 基于社会网络的决策, 及寡头垄断下的决策, 以持续期期作为时间控制要素, 通过仿真观察到金融市场收益分布的"尖峰厚尾"特征、寡头市场股价异常等金融市场复杂现象, 并分析了学习机制、 学习结构及持续期策略在博弈中的作用及产生的不同市场效应.

关键词： 少数者博弈模型   复杂网络   agent   计算实验金融学   金融市场

Abstract： Minority game and complex finance networks model are researched in this paper. The network structure represents the studying relation between the agents among the finance market. Simulation was run on three kinds of networks including random network, small-world network, and scale-free network. The simulation results show the fat-tail distribution feature of returns distribution, and abnormal stock price of oligopoly market in finance market.

Key words： minority game   complex network   agent   computational finance   financial market

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