Simulating Financial Markets using MASON Framework*

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Abstract. AAA

Key words: Agent-based Modeling, Computational Social Science, Financial Markets

1 Motivation and Objectives

2 Platform Architecture

3 Verification of Correctness

4 Overview of Implemented Models

- Doyne Farmer et al. [2003]
- Lamba and Seaman [2007]
- Westerhoff [2004]
- Cont [2006]

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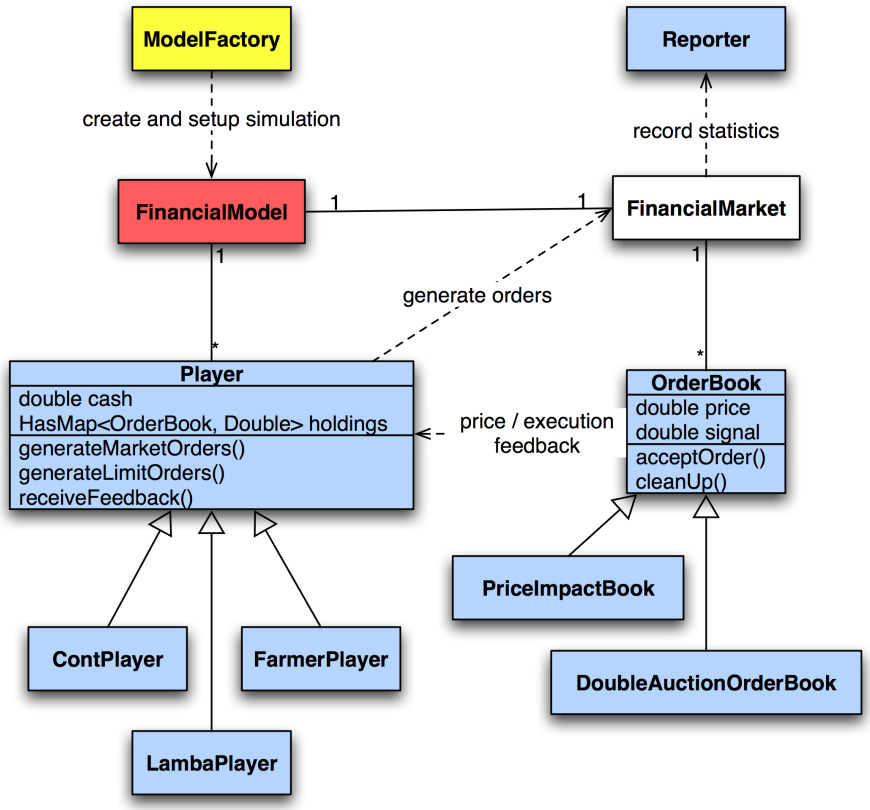
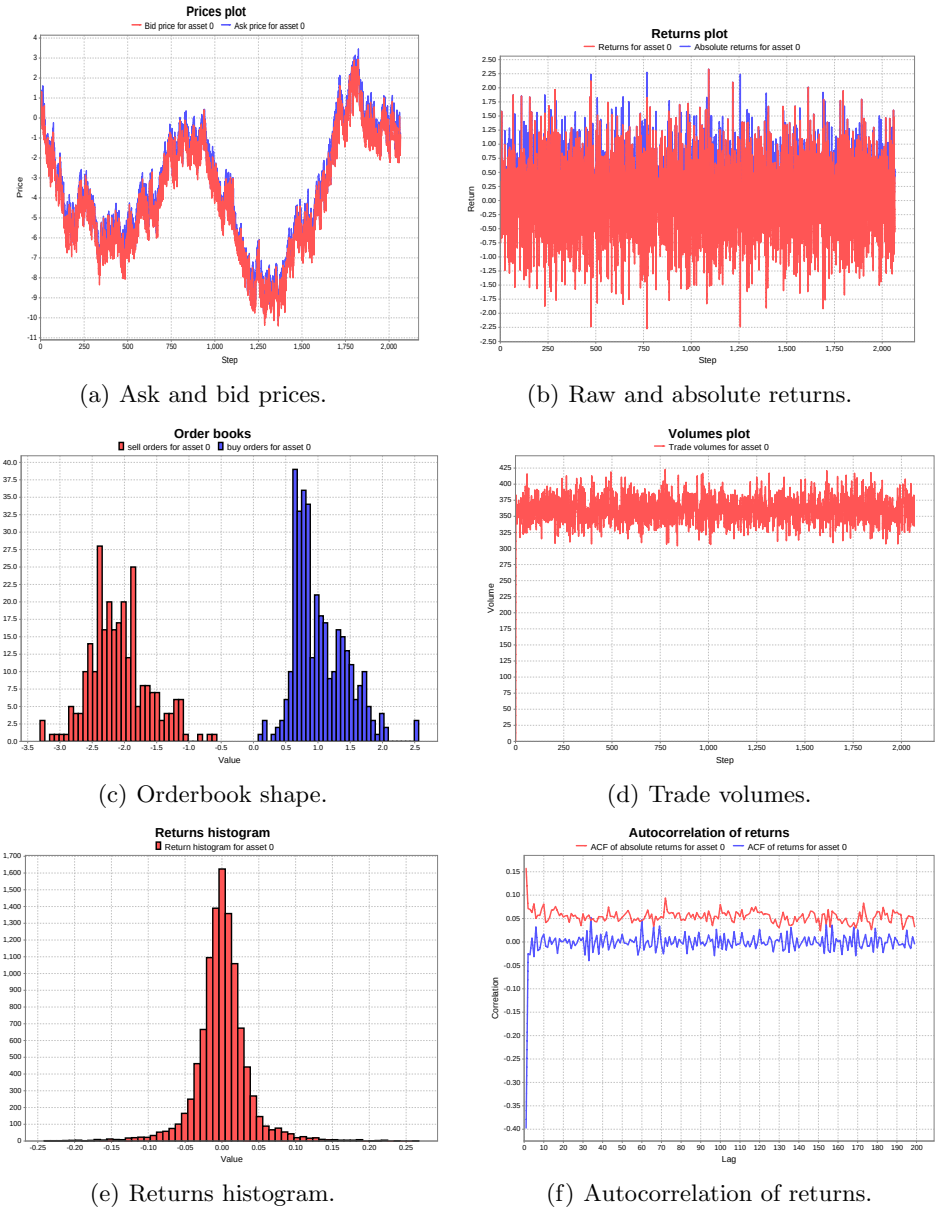


Fig. 1. High-level UML class diagram of the main components and relations in the FinancialMarketModel, including the main attributes of Players and OrderBooks. Agent classes (light blue) inherit from the MASON `Steppable` interface while the master class is implementation of MASON's `SimState`.



(a) Ask and bid prices.

(b) Raw and absolute returns.

(c) Orderbook shape.

(d) Trade volumes.

(e) Returns histogram.

(f) Autocorrelation of returns.

Fig. 2. Examples of outputs and statistics from a single run of the FinancialModel simulation for default Farmer's parametrization.

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