

Dynamics of financial time series in an inhomogeneous aggregation framework

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Extended Abstract

The presence of long memory property of financial data has been evidenced through several papers. These analyses concern time series of shares' prices, price increments, returns, and several functions of returns (absolute returns, squared returns, powered returns).

However, microeconomic explanation of these data often is not obvious.

In this paper we provide a microeconomic model to investigate the long memory for the exchange rates time series. The market exchange rates are assumed to be determined by the interaction of several economic subjects.

In the framework we propose, each agent take position in the market following a mixed fundamentalist-chartist strategy, depending on the influence of different sources of information. Moreover, we introduce a term that allows each agent to perform a self-correction on his own forecasts.

Furthermore, we work assuming a financial world, where the agents take position differently. The resultant of their time-varying aggregations has to take into account a different weight for each financial subject.

The main property of this model is the functional relation between its parameters and the long memory parameters of the time series under examination. This allows an immediate calibration of the model avoiding time-expensive numerical calibration procedures.

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