

The dynamic mechanism of trend reverses in financial market

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Abstract

Recently, most people adopt time series prediction by developing econometric models based on empirical data, but their results are always influenced by the hypothesis of variables distribution or by the microstructure noises. The prediction would be more precise if they can infer the trend of that period, so it is hard for us to explain how and why the trend reverts. And some others use agent-based models, they assume that investors are rational when they choose decisions from certain strategies, considering price, payoff, probability and mixed strategies of last period.

In this paper, we develop a novel model to display the dynamic mechanism of trend reverses in financial market, combining times series analysis and agent-based model together. As in markets, there are only two types of investors when trading take place. But the behaviors and judgments of buyers and sellers are always changed, so the prices of financial products always fluctuate. Investors can be treated as agents, agents interact through information they get from past periods interactions (not only the $t-1$ period, but may be $t-n$ periods), their behaviors are autocorrelated. We present that how agents select their decisions between buying and selling, and analyze econometric characters of their numbers, ratio and energy. We also discuss how these variables will impact the results. We suppose that if all the investors converge to one type--buyer or seller, energy of one side will decline to relatively small strength, then the market will reach its summit or bottom, finally the trend revert.

Keywords

Financial market, trend reverse, time series analysis, agent-based model

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