Option Market Analysis with Evolutionary Game Theory

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Abstract:
This study discusses the financial market with evolutionary game theory from the basics. This study analyzes the following situations: there are many buyers and sellers in this market and each player plays a game with a randomly matched player.

In detail, this study pays attention to the order book and constructs the market model (for example, option market, future market, etc.). This study analyzes the real market with evolutionary game theory and derives the payoff matrix. We can predict the next market states with the equilibrium stability condition.

This study compares this model and Black and Sholes (1973) which is the basic mathematical financial model. This study can interpret that this model gives a player's micro-foundation with Black and Sholes (1973).