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Forecast of stock market based on nonharmonic analysis used on NASDAQ since 1985

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Abstract

Although research involving economic time series forecasting based on virtual market models is frequently conducted, long-term forecasting is difficult due to many factors that affect actual markets. However, as exemplified by the business cycle and Elliot Wave theories in economics, it is assumed that fluctuations in economic time series forecasting have various periodicities, ranging from short-term to long-term. Accordingly, we used a new high-resolution frequency analysis (Non-Harmonic Analysis (NHA)) method, which we have recently developed, to conduct analysis of the periodicity of economic time series forecasting. We also attempted a long-term economic time series forecast by combining multiple periodic signals. In the verification experiment, we analysed the National Association of Securities Dealers Automated Quotations (NASDAQ) closing price data for a time period of approximately 20 years

using nonharmonic analysis with an analysis window of the previous 2 years, and forecasted price fluctuations for the following 2 years.

Keywords:

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Volatility estimators based on daily price ranges versus the realized range

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