

Applied Financial Economics >

Volume 22, 2012 - [Issue 3](#)

292 | 12 | 0  
Views | CrossRef citations to date | Altmetric

Original Articles

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

Takafumi Ichinose ✉, Shigeki Hirobayashi, Tadanobu Misawa & Toshio Yoshizawa

Pages 197-208 | Published online: 11 Oct 2011

🗨️ Cite this article 🔗 <https://doi.org/10.1080/09603107.2011.607129>

Sample our  
Economics, Finance,  
Business & Industry Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

📄 Full Article   📊 Figures & data   📖 References   🗨️ Citations   📊 Metrics

📄 Reprints & Permissions

Read this article

Share

## 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:

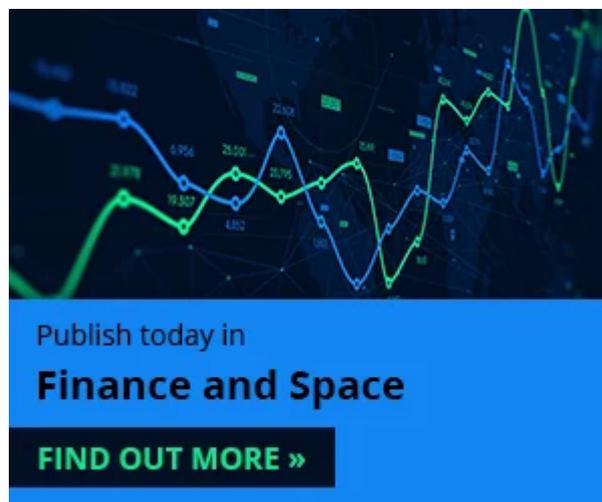
NASDAQ signal processing Fourier transform Non-Harmonic Analysis (NHA) stock market

JEL Classification:

C63 C53 C32 C50 C30

## Acknowledgements

I would like to express my deepest gratitude to graduates from our department, T. Sugata, H. Usui, T. Ishikawa K. Yamamoto and Y. Sasabe, for their cooperation in the computational experiments.



## Related research

People also read

Recommended articles

Cited by  
12

[Realized volatility and jumps in the Athens Stock Exchange >](#)

Dimitrios I. Vortelinos et al.  
Applied Financial Economics  
Published online: 3 Oct 2011

Neda Todorova

Applied Financial Economics

Published online: 11 Oct 2011

## Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

## Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

## Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

## Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

## Keep up to date

Register to receive personalised research and resources by email



[Sign me up](#)



Copyright © 2026 Informa UK Limited [Privacy policy](#)

[Cookies](#) [Terms & conditions](#) [Accessibility](#)

Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG



**Taylor & Francis**  
by **informa**...