







Q

Home ► All Journals ► Mathematics, Statistics & Data Science ► Journal of Business & Economic Statistics ► List of Issues ► Volume 15, Issue 1 ► Uncovering Nonlinear Structure In Real-T

Journal of Business & Economic Statistics >

Volume 15, 1997 - <u>Issue 1</u>

614 34 O Views CrossRef citations to date Altmetric

Original Articles

Uncovering Nonlinear Structure In Real-Time Stock-Market Indexes: The S&P 500, the DAX, the Nikkei 225, and the FTSE-100

A. Abhyankar, L. S. Copeland & W. Wong

Pages 1-14 | Published online: 02 Jul 2012

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

References

66 Citations

Metrics

♣ Reprints & Permissions

Read this article

Share

Abstract

This article tests for nonlinear dependence and chaos in real-time returns on the world's four most important stock-market indexes. Both the Brock-Dechert-Scheinkman and the Lee, White, and Granger neural-network-based tests indicate persistent nonlinear structure in the series. Estimates of the Lyapunov exponents using the Nychka, Ellner, Gallant, and McCaffrey neural-net method and the Zeng, Pielke, and Eyckholt nearest-neighbor algorithm confirm the presence of nonlinear dependence in the returns on all indexes but provide no evidence of low-dimensional chaotic processes. Given the sensitivity of the results to the estimation parameters, we conclude that the data are dominated by a stochastic component.

KEY WORDS:

Brock-Dechert-Scheinkman test Chaos GARCH models Lyapunov exponent Nearest-neighbor method

Neural net Nonparametric Stock index futures Stock returns

Related Research Data

A sharper Bonferroni procedure for multiple tests of significance

Source: Biometrika

Testing for Nonlinear Dependence in Daily Foreign Exchange Rates

Source: The Journal of Business

EXTRACTING LYAPUNOV EXPONENTS FROM SHORT TIME SERIES OF LOW PRECISION

Source: Modern Physics Letters B

Measuring the Strangeness of Gold and Silver Rates of Return

Source: The Review of Economic Studies

Bispectral-Based Tests for the Detection of Gaussianity and Linearity in Time Series

Source: Journal of the American Statistical Association

Nonlinear Dynamics and Stock Returns

Source: The Journal of Business

Detecting strange attractors in turbulence

Source: Unknown Repository

Testing for neglected nonlinearity in time series models

Related research 1

People also read Recommended articles

Cited by 34

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











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



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