Taylor & Francis
Online

Home ► All Journals ► Economics, Finance & Business ► Applied Financial Economics ► List of Issues
► Volume 18, Issue 15 ► Estimating stock market volatility using ....

Applied Financial Economics ›

Volume 18, 2008 - Issue 15

Original Articles

Estimating stock market volatility using asymmetric GARCH models

Dima Alberg, Haim Shalit ✉ & Rami Yosef

🔖 Cite this article   ↗ https://doi.org/10.1080/09603100701604225

📄 Full Article   🖼 Figures & data   🗐 References   🔖 Citations   📊 Metrics

🖨 Reprints & Permissions | Read this article | | ◄ Share |

Abstract

A comprehensive empirical analysis of the mean return and conditional variance of Tel Aviv Stock Exchange (TASE) indices is performed using various GARCH models. The prediction performance of these conditional changing variance models is compared to newer asymmetric GJR and APARCH models. We also quantify the day-of-the-week effect and the leverage effect and test for asymmetric volatility. Our results show that the asymmetric GARCH model with fat-tailed densities improves overall estimation for measuring conditional variance. The EGARCH model using a skewed Student-t distribution is the most successful for forecasting TASE indices.

Notes

[1] The TA25 Index is a value-weighted index of the shares of the 25 companies with the highest market capitalization that are traded on the TASE.

[2] The TA100 Index is a value-weighted index of the shares of the 100 companies with the highest market capitalization that are traded on the TASE.

[3] The BFGS method approximates the Hessian matrix by analyzing successive gradients vectors.

[4] The estimated values for the four models are available from the authors.

[5] The Prob[1] and Prob[2] are the probability values for P(50), the first using 49 degrees of freedom and the second 49 minus the number of estimated parameters.

[6] MSE and MAE are generally affected by larger errors such as in the case of outliers. MedSE and AMAPE have the advantage of reducing the effect of outliers.

Related Research Data

Forecasting volatility in the New Zealand stock market
Source: Applied Financial Economics

Conditional Heteroskedasticity in Asset Returns: A New Approach
Source: Unknown Repository

Day of the week effect on the Greek stock market
Source: Applied Financial Economics

Maximum likelihood estimation of a GARCH-stable model
Source: Journal of Applied Econometrics

Common Stochastic Trends in a System of Exchange Rates
Source: The Journal of Finance

Accounting for conditional leptokurtosis and closing days effects in FIGARCH models of daily exchange rates
Source: Applied Financial Economics

An evaluation of volatility forecasting techniques
Source: Journal of Banking & Finance

Related research ⓘ

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**