P.A. Groenendijk (Patrick), A. Lucas (André) and C.G. de Vries (Casper) 1998-09-08

A Hybrid Joint Moment Ratio Test for Financial Time Series

We advocate the use of absolute moment ratio statistics in conjunction with standard variance ratio statistics in order to disentangle linear dependence, non-linear dependence, and leptokurtosis in financial time series. Both statistics are computed for multiple return horizons simultaneously, and the results are presented in a comprehensive way using a graphical device. We construct a formal joint testing procedure based on bootstrapped and block-bootstrapped uniform confidence intervals. The methodology is hybrid because it combines a formal testing procedure with volatility curve pattern recognition based on expert opinions. An application to forex data illustrates the procedure.

Additional Metadata

Keywords	absolute returns, bootstrap, fat-tails, forex market efficiency, linear dependence, stable distributions, variance ratios, volatility clustering
JEL	Semiparametric and Nonparametric Methods (jel C14), Foreign Exchange (jel F31), Information and Market Efficiency; Event Studies (jel G14)
Persistent URL	hdl.handle.net/1765/7746
Series	Tinbergen Institute Discussion Paper Series
Organisation	Tinbergen Institute
Citation APA Style	Groenendijk, P., Lucas, A., & de Vries, C. (1998). *A Hybrid Joint Moment Ratio Test for Financial Time Series* (No. TI 98-104/2). *Tinbergen Institute Discussion Paper Series*. Retrieved from http://hdl.handle.net/1765/7746

A Hybrid Joint Moment Ratio Test for Financial Time Series*

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September 8, 1998

Abstract

We advocate the use of absolute moment ratio statistics in conjunction with standard variance ratio statistics in order to discriminate linear dependence, nonlinear dependence, and leptokurtosis in financial time series. Both statistics are computed for multiple return horizons simultaneously, and the results are presented in a comprehensive way using a graphical device. We construct a formal joint testing procedure based on bootstrapped and block-bootstrapped uniform confidence intervals. The methodology is hybrid because it combines a formal testing procedure with volatility curve pattern recognition based on expert opinions. An application to forex data illustrates the procedure.

JEL Codes: C14, F31, G10

Keywords: variance ratios, absolute returns, bivariate linear dependence, volatility clustering, leptokurtosy, forex market efficiency, stable distributions.

*We thank Jon Danielsson, Laurens de Haan, Henk Berk, and Bruno Werker for helpful comments. We also benefited from a presentation at the E.S.E.M. 1998 in Berlin.

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