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.

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Abstract

We advocate the use of absolute moment ratio statistics in conjunction with standard variance ratio statistics in order to discriminate 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.

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