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**Rescaled Range Analysis and Detrended Fluctuation Analysis: Finite Sample Properties and Confidence Intervals**

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**Abstract:** We focus on finite sample properties of two mostly used methods of Hurst exponent H estimation—rescaled range analysis (R/S) and detrended fluctuation analysis (DFA). Even though both methods have been widely applied on different types of financial assets, only several papers have dealt with the finite sample properties which are crucial as the properties differ significantly from the asymptotic ones. Recently, R/S analysis has been shown to overestimate H when compared to DFA. However, we show that even though the estimates of R/S are truly significantly higher than an asymptotic limit of 0.5, for random time series with lengths from  $2^9$  to  $2^{17}$ , they remain very close to the estimates proposed by Anis & Lloyd and the estimated standard deviations are lower than the ones of DFA. On the other hand, DFA estimates are very close to 0.5. The results propose that R/S still remains useful and robust method even when compared to newer method of DFA which is usually preferred in recent literature.

**JEL classification:** G1, G10, G14, G15

**Keywords:** Rescaled range analysis, detrended fluctuation analysis, Hurst exponent, long-range dependence, confidence intervals

**RePEc:** [http://ideas.repec.org/a/fau/aucoz/au2010\\_315.html](http://ideas.repec.org/a/fau/aucoz/au2010_315.html)

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