Reduction of a certain noise component in financial correlation matrices

Thomas Guhr

Lunds Universitet, Lund, Sweden

Date : October 6, 2006 (Friday) **Time :** 1:45-2:30 PM

Abstract

The correlation coefficients measured from the recorded time series of the stock prices are often unreliable, because the true correlations are noise-dressed. A major reason for the noise is the finiteness of the time series. This effect can be so serious that new methods to reduce the noise are urgently needed for portfolio optimization. Several such methods have been proposed. I focus on two conceptually very different methods: the filtering and the power mapping. The Markowitz theory for portfolio optimization is applied to real market data for Swedish and US stocks to show how the noise reduction improves the portfolios.