

**Department of Banking and Financial Management
University of Piraeus**



Research Seminar Series

**Thursday, October 16 2008
Time: 16:00 – 18:00, Room 013**

Seminar Title

**“Forecasting Long Memory Processes Subject to Structural Breaks”
Professor Luc Bauwens**

Université catholique de Louvain and CORE

Summary

We develop a new and improved method for forecasting a stationary autoregressive fractionally integrated moving average (ARFIMA) process subject to structural breaks, via an autoregressive (AR) approximation. We prove that an ARFIMA process subject to breaks can be approximated well by an AR model. We use Mallows' criterion to choose the order of the approximate AR model. Our method helps to avoid the issue of spurious breaks and the confusion between long memory and structural changes. Insights from our theoretical analysis are confirmed by Monte Carlo experiments, through which we also find that our method provides a substantial improvement over existing methods. Finally, an empirical application to the realized volatility of the DEM/USD and Yen/USD spot exchange rates illustrates the usefulness of our forecast procedure.

Luc Bauwens holds a Ph. D. (1984) from the Université catholique de Louvain (UCL), for which he received the Leonard J. Savage Thesis Award. He is full professor of economics at UCL and the research director of the Center for Operations Research and Econometrics. He is associate editor of the Journal of Applied Econometrics and the Journal of Financial Econometrics.