

THE CHINESE UNIVERSITY OF HONG KONG

Department of Statistics

will present a seminar entitled

Modelling Volatility by Variance Decomposition

by

**Professor Timo Teräsvirta
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on

**Thursday, 15 October 2009
2:30pm – 3:30pm**

in

**Liang Y C Hall G03
The Chinese University of Hong Kong**

Abstract:

We propose two parametric alternatives to the standard GARCH model. They allow the conditional variance to have a smooth time-varying structure of either additive or multiplicative type. The suggested parameterizations describe both nonlinearity and structural change in the conditional and unconditional variances where the transition between regimes over time is smooth. A modelling strategy for these new time-varying parameter GARCH models is developed. It relies on a sequence of Lagrange multiplier tests, and the adequacy of the estimated models is investigated by Lagrange multiplier type misspecification tests. Finite-sample properties of these procedures and tests are examined by simulation. An empirical application to daily stock returns and another one to daily exchange rate returns illustrate the functioning and properties of our modelling strategy in practice. The results show that the long memory type behaviour of the sample autocorrelation functions of the absolute returns can also be explained by deterministic changes in the unconditional variance.

This is joint work with Cristina Amado.

All are Welcome