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DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Dominique Guégan

Professeure Paris1-Panthéon-Sorbonne
Centre d'Economie de la Sorbonne
France

will give a talk

entitled

THE *K*-FACTOR GEGENBAUER ASYMMETRIC POWER GARCH APPROACH FOR MODELLING ELECTRICITY SPOT PRICE DYNAMICS

Abstract

To date, numerous efforts have been made to model the behaviour of prices observed within the electricity market. Such interest comes to no surprise given the rich number of typical features at hand in such time series. These include; complex seasonality patterns, persistence, mean reversion, spikes, asymmetric behaviour and leptokurtosis. In this talk, we propose a new approach dealing with the stationary *k*-factor Gegenbauer process with Asymmetric Power GARCH noise under the conditional Student-*t* distribution. Such an approach enables us to account for the above features. We label this model as the GG *k*-APARCH. Derivation of the stationary and invertible conditions, as well as, the delta-th-order moment of the model is presented. We, then, shift focus to the estimation parameters and provide the analytical form of the likelihood (function) permitting consistent estimates. In order to characterise the properties of these estimates, we perform a Monte Carlo experiment. Finally, we apply the model to spot price data from the Leipzig Power Exchange (LPX) in Germany; Powernext in France; Operadore del Mercado Espanol de Electricidad (OMEL) in Spain; and the Pennsylvania-New Jersey-Maryland (PJM) interconnection in the United States.

on

Monday, February 16, 2009

10:00 a.m. – 11:00 a.m.

at

Room 524, Meng Wah Complex
(behind the Chong Yuet Ming Amenities Centre)

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 2859 2466 for parking arrangement.

All interested are welcome