> Thursday, January 21st, 2021
12:30 - 14:00

FINANCE RESEARCH SEMINAR

IÉSEG SCHOOL OF MANAGEMENT

EMPOWERING CHANGEMAKERS FOR A BETTER SOCIETY

"MODELLING VOLATILITY CYCLES: THE (MF)^2 GARCH MODEL"

A joint work with Robert Engle (Nobel Laureate, 2003)

DR CHRISTIAN CONRAD – HEIDELBERG UNIVERSITY

ABSTRACT

We suggest a multiplicative factor multi frequency ((MF)^2) component GARCH model. The model consists of a short-term and a long-term volatility component. The long-term component is based on a MEM equation for the average standardized forecast errors of the GARCH component and captures the counter-cyclical behaviour of financial volatility. We derive the unconditional variance of the returns in the (MF)^2 GARCH and discuss the news impact function. Since the new model is dynamically complete, it is straightforward to construct multi-step ahead volatility forecasts. We apply the model to the S&P 500, the FTSE 100 and the Hang Seng Index. We show that the long-term component of the S&P 500 behaves counter-cyclical and is driven by news about the macroeconomic outlook, corporate earnings and policy. The (MF)^2 GARCH significantly outperforms the nested one-component (GJR) GARCH as well as several HAR-type models in terms of out-of-sample forecasting.

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