RESEARCH SEMINAR

IÉSEG SCHOOL OF MANAGEMENT

EMPOWERING CHANGEMAKERS FOR A BETTER SOCIETY

'GENERALIZED AUTOREGRESSIVE CONDITIONAL BETAS: LONGITUDINAL FEEDBACK IN MULTIFACTOR ASSET PRICING'

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ABSTRACT

We propose a new class of observation-driven models describing the joint dynamics of the time-varying slopes in a system of conditionally heteroskedastic simultaneous multiple regressions. The model, dubbed Generalized Autoregressive Conditional Betas (GACB), introduces new and economically meaningful mechanisms of propagation of shocks, namely beta spillovers. The GACB can accommodate large dimensions (both regressors and regressands), testing parametric longitudinal restrictions, introducing exogenous variables influencing betas, as well as the coexistence of constant and time-varying betas. We derive stationarity and uniform invertibility conditions and present beta and covariance tracking constraints. We propose a variety of computationally convenient quasi-maximum likelihood estimators (parallel and sequential), and we assess their finite sample properties using extensive Monte Carlo experiments. Finally, we use the GACB to illustrate the role of beta spillovers in the Fama-French three factors asset pricing model.

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