

SÉMINAIRE DE MATHÉMATIQUES ACTUARIELLES ET FINANCIÈRES

organisé par Quantact, le Laboratoire de mathématiques actuarielles et financières du CRM

AA-5340

2920, Chemin de la tour, Montréal

Pavillon André-Aisenstadt, Université de Montréal

Vendredi, le 27 novembre 2015, 15:15-16:45 (2 x 45 min.)

Arnaud Dufays

Département d'économie, Université Laval

Membre associé du Centre de Recherche en Économie et Statistique (CREST)

En collaboration avec Jeroen Rombouts (ESSEC Business School)

Sparse Change-Point Time Series Models

Change-point time series specifications constitute flexible models that capture unknown structural changes by allowing for switches in the model parameters. Nevertheless most models suffer from an over-parametrization issue since typically only one latent state variable drives the breaks. This implies that all parameters have to change when a break happens. We introduce sparse change-point processes, a new approach for detecting which parameters change over time. We propose shrinkage prior distributions allowing to control model parsimony by limiting the number of parameters which evolve from one structural break to another. We also give clear rules with respect to the choice of the hyper parameters of the new prior distributions. Well-known applications are revisited to emphasize that many popular breaks are, in fact, due to a change in only a subset of the model parameters. It also turns out that sizeable forecasting improvements are made over standard change-point models. Paper available at: https://www.uclouvain.be/cps/ucl/doc/core/documents/coredp2015_32web.pdf

Hirbod Assa

Institute for Risk and Uncertainty & Institute for Financial and Actuarial Mathematics, University of Liverpool

En collaboration avec Nikolay Gospodinov (Federal Reserve Bank of Atlanta)

Market Consistent and Sub-Consistent Valuations in Incomplete Markets

From January 2016, all insurance companies that are regulated within Solvency II framework will have to value their assets and liabilities using a market-consistent method. This paper studies market-consistent and sub-consistent valuations in incomplete financial markets with two types (type I and II) of market consistency. While market consistency of type I holds under fairly weak assumptions, the type II consistency, which is the usual definition of market consistency in the literature, holds only if the market prices are linear for fully hedged assets. We also characterize the market consistent and sub-consistent evaluators in several different ways. We discuss how market-consistent and sub-consistent valuations can be regarded as a robust approach to hedging and pricing in the presence of market imperfections such as market incompleteness and frictions. Paper available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2659731

SEMINAR OF ACTUARIAL AND FINANCIAL MATHEMATICS

organized by *Quantact, the CRM Laboratory of Actuarial and Financial Mathematics*

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