

FERM-Editorial

The papers in this volume represent some recent advances in the interface between Statistics and the field of Financial Engineering and Risk Management. A selection of papers presented at the International Symposium on Financial Engineering and Risk Management (FERM2007) held at Guanghua School of Management of Peking University in July 2007 was supplemented with several additional articles to make up this volume.

Stewart Inglis, Alex Lipton, Ioana Savescu and Artur Sepp present a dynamic jump-to-default model for the default events of individual obligors, and use factor models to represent the correlation between these default events. Samuel Wong and Tze Leung Lai develop new empirical Bayes models for modeling probability of default and loss given default, which are the key ingredients in the internal ratings-based approach to credit risk analysis of retail exposures. Yongchang Feng, Rong Chen and Gilbert Bassett investigate the momentum strategies for buying and selling stocks in terms of the newly proposed quantile momentum, and present the returns to long, short and their combinations of momentum portfolios based on some alternative definitions of momentum.

Per Mykland and Lan Zhang study the nonparametric estimation of volatilities and instantaneous covariations between diffusion type processes, and its implications for the hedging of options. Yazhen Wang and Jianqing Fan employ a bivariate diffusion to model the price and volatility of an asset and investigate kernel type estimators of spot volatility based on high-frequency return data. The quest for volatility inference continues in two other papers by Jun Yu and Shirley Huang, and Chun Fai Chu and Kai Pui Lam: the former deals with an efficient and simulation-based maximum likelihood estimation for stochastic volatility models,

and the latter investigates the impact of overnight return on Engles MEM-GARCH model and the means to incorporate overnight information in volatility prediction.

Guojun Wu and Zhijie Xiao propose a new test for speculative bubbles in stock markets, which exhibits advantages over the traditional unit root based test, especially when bubbles are collapsible. Oliver Linton proposes a nonparametric censoring model to explain the evolution of the frequency of zeros in stock index returns. Wenjiang Jiang, Zhenyu Wu and Gemai Chen develop a new time series model based on a class of quantile functions for studying financial price behaviors, focusing on the tail properties of the prices.

Zongwu Cai considers the inference for a class of functional coefficient models under weak instrument assumptions. Liangjun Su and Zhijie Xiao investigate a CUSUM type of test for structural change in dynamic nonparametric regression models. Jens-Peter Kreiss, Michael Nuemann and Qiwei Yao develop bootstrap tests for simple structures in nonparametric regressions, which may be used to detect the forms of drift and diffusion functions in some financial econometrics models.

Finally we thank all the authors who contributed their new research results to this issue. We also thank the referees for their invaluable help in improving the quality of this final product. We sincerely hope that this special issue will give you at least some part of the joy and fun that we have had in editing it.

Jianqing Fan (Guest Editor)
Per Mykland (Guest Editor)
Qiwei Yao (Co-Editor)