STATISTICS & RISK MODELING

WITH APPLICATIONS IN FINANCE AND INSURANCE

EDITOR-IN-CHIEF

Robert Stelzer, Germany

CO-EDITORS

Hansjörg Albrecher, Switzerland Rama Cont, UK Georg Pflug, Austria Ludger Rüschendorf, Germany

ADVISORY BOARD

Paul Embrechts, Switzerland Walter Schachermayer, Austria Albert Shiryaev, Russia Helmut Strasser, Austria

ASSOCIATE EDITORS

Nicole Bäuerle, Germany Wolfgang Härdle, Germany Johanna Nešlehová, Canada Ludger Overbeck, Germany Mark Podolskij, Denmark Zari Rachev, USA Mathieu Rosenbaum, France Peter Tankov, France

DE GRUYTER

ABSTRACTED/INDEXED IN Baidu Scholar · Cabell's Directory · Celdes · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC · De Gruyter: IBR (International Bibliography of Reviews of Scholarly Literature in the Humanities and Social Sciences); IBZ (International Bibliography of Periodical Literature in the Humanities and Social Sciences) · EBSCO (relevant databases) · EBSCO Discovery Service · Elsevier: SCOPUS · Genamics JournalSeek · Google Scholar · J-Gate · JournalTOCs · Mathematical Reviews (MathSciNet) · Naviga (Softweco) · Primo Central (ExLibris) · ProQuest (relevant databases) · ReadCube · Research Papers in Economics (RePEc) · ResearchGate · SCImago (SJR) · Sherpa/RoMEO · Summon (Serials Solutions/ProQuest) · TDOne (TDNet) · Thomson Reuters: Emerging Sources Citation Index · WorldCat (OCLC) · Zentralblatt Math (zbMATH)

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions of liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 2193-1402 · e-ISSN 2196-7040

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/strm.

RESPONSIBLE EDITOR Robert Stelzer, Institut für Finanzmathematik, Universität Ulm, Helmholtzstr. 18, 89081 Ulm, Germany. Email: Robert.Stelzer@uni-ulm.de

JOURNAL MANAGER Holger Kleessen, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany. Tel.: +49 (0)30 260 05-348, Fax: +49 (0)30 260 05-184, Email: STRM.Editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany. Tel.: +49 (0)30 260 05-226, Fax: +49 (0)30 260 05-264, Email: Anzeigen@degruyter.com

© 2016 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Dimler & Albroscheit, Müncheberg

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

Printed in Germany



Contents

Special Issue: Systemic Risk: Data, Models and Metrics. Part 1

Guest Editors: Rama Cont and Michael Gordy

Mark H. A. Davis

Verification of internal risk measure estimates — 67

Gaël Hauton, Jean-Cyprien Héam

How to measure interconnectedness between banks,
insurers and financial conglomerates — 95

Stefano Battiston, Guido Caldarelli, Marco D'Errico, Stefano Gurciullo

Leveraging the network: A stress-test framework based on DebtRank —— 117

Weilong Guo, Andreea Minca, Li Wang
The topology of overlapping portfolio networks —— 139