

WILEY FINANCE

European fixed income markets

*Money, Bond and
Interest Rate Derivatives*

Edited by
JONATHAN A. BATTEN
THOMAS A. FETHERSTON
PETER G. SZILAGYI

European Fixed Income Markets

Wiley Finance Series

Inflation-Indexed Securities: Bonds, Swaps and Other Derivatives, 2nd Edition

Mark Deacon, Andrew Derry and Dariush Mirfendereski

European Fixed Income Markets: Money, Bond and Interest Rates

Jonathan Batten, Thomas Fetherston and Peter Szilagyi (Editors)

Global Securitisation and CDOs

John Deacon

Applied Quantitative Methods for Trading and Investment

Christian L. Dunis, Jason Laws and Patrick Naim (Editors)

Country Risk Assessment: A Guide to Global Investment Strategy

Michel Henry Bouchet, Ephraim Clark and Bertrand Gros Lambert

Credit Derivatives Pricing Models: Models, Pricing and Implementation

Philipp J. Schönbucher

Hedge Funds: A Resource for Investors

Simone Borla

A Foreign Exchange Primer

Shani Shamah

The Simple Rules: Revisiting the Art of Financial Risk Management

Erik Banks

Option Theory

Peter James

Risk-adjusted Lending Conditions

Werner Rosenberger

Measuring Market Risk

Kevin Dowd

An Introduction to Market Risk Management

Kevin Dowd

Behavioural Finance

James Montier

Asset Management: Equities Demystified

Shanta Acharya

An Introduction to Capital Markets: Products, Strategies, Participants

Andrew M. Chisholm

Hedge Funds: Myths and Limits

Francois-Serge Lhabitant

The Manager's Concise Guide to Risk

Jihad S. Nader

Securities Operations: A Guide to Trade and Position Management

Michael Simmons

Modeling, Measuring and Hedging Operational Risk

Marcelo Cruz

Monte Carlo Methods in Finance

Peter Jäckel

Building and Using Dynamic Interest Rate Models

Ken Kortanek and Vladimir Medvedev

Structured Equity Derivatives: The Definitive Guide to Exotic Options and Structured Notes

Harry Kat

Advanced Modelling in Finance Using Excel and VBA

Mary Jackson and Mike Staunton

Operational Risk: Measurement and Modelling

Jack King

Interest Rate Modelling

Jessica James and Nick Webber

European Fixed Income Markets

Money, Bond, and Interest Rate Derivatives

Jonathan A. Batten
Thomas A. Fetherston
and
Peter G. Szilagyi



John Wiley & Sons, Ltd

Copyright © 2004 John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester,
West Sussex PO19 8SQ, England

Telephone (+44) 1243 779777

Email (for orders and customer service enquiries): cs-books@wiley.co.uk
Visit our Home Page on www.wileyeurope.com or www.wiley.com

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except under the terms of the Copyright, Designs and Patents Act 1988 or under the terms of a licence issued by the Copyright Licensing Agency Ltd, 90 Tottenham Court Road, London W1T 4LP, UK, without the permission in writing of the Publisher. Requests to the Publisher should be addressed to the Permissions Department, John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England, or emailed to permreq@wiley.co.uk, or faxed to (+44) 1243 770620.

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold on the understanding that the Publisher is not engaged in rendering professional services. If professional advice or other expert assistance is required, the services of a competent professional should be sought.

Other Wiley Editorial Offices

John Wiley & Sons Inc., 111 River Street, Hoboken, NJ 07030, USA

Jossey-Bass, 989 Market Street, San Francisco, CA 94103-1741, USA

Wiley-VCH Verlag GmbH, Boschstr. 12, D-69469 Weinheim, Germany

John Wiley & Sons Australia Ltd, 33 Park Road, Milton, Queensland 4064, Australia

John Wiley & Sons (Asia) Pte Ltd, 2 Clementi Loop #02-01, Jin Xing Distripark, Singapore 129809

John Wiley & Sons Canada Ltd, 22 Worcester Road, Etobicoke, Ontario, Canada M9W 1L1

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Cataloging-in-Publication Data

European fixed income markets : money, bond, and interest rate derivatives / [edited by] Jonathan A. Batten, Thomas A. Fetherston, Peter G. Szilagyi.

p. cm. – (Wiley finance series)

Includes bibliographical references and index.

ISBN 0-470-85053-1 (alk. paper)

1. Capital market–Europe. 2. Capital market–European Union countries. 3. Fixed-income securities–Europe. 4. Fixed-income securities–European Union countries. I. Batten, Jonathan. II. Fetherston, Thomas A. III. Szilagyi, Peter G., 1976– IV. Series.

HG5422 .E9844 2003

332'.041'094–dc22

2003021224

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN 0-470-85053-1

Typeset in 10/12pt Times by TechBooks, New Delhi, India

Printed and bound in Great Britain by Antony Rowe Ltd, Chippenham, Wiltshire

This book is printed on acid-free paper responsibly manufactured from sustainable forestry in which at least two trees are planted for each one used for paper production.

Anyának szeretettel, Laci és Peti

Contents

SECTION I PERSPECTIVE ON EUROPEAN FIXED INCOME AND DERIVATIVE MARKETS	1
1 Introduction to the Volume	3
<i>Jonathan A. Batten, Thomas A. Fetherston, and Peter G. Szilagyi</i>	
1.1 Overview	3
1.2 Chapter overview	8
References	26
2 The Euro Area Bond Market: Integration and Development Under Monetary Union	27
<i>Peter G. Szilagyi</i>	
2.1 Introduction	27
2.2 Theoretical underpinnings of financial integration	28
2.3 Bond market development under monetary union	31
2.4 Proposals and initiatives for reducing market fragmentation	49
2.5 Conclusion	50
References	51
3 Perspective on the Emerging European Financial Markets	53
<i>Peter G. Szilagyi, Thomas A. Fetherston, and Jonathan A. Batten</i>	
3.1 Introduction	53
3.2 Financial structures in emerging Europe	54
3.3 International bank borrowing	56
3.4 International debt issues	58
3.5 Domestic debt issues	59
3.6 Conclusion	64
References	65

4 Perspectives on European Derivative Markets	67
<i>Martin Young</i>	
4.1 Introduction and a brief history of the European derivative markets	67
4.2 Europe's major derivative markets	68
4.3 An overview of the contracts traded on EUREX and Euronext.Liffe	75
4.4 Europe's other derivative markets	80
4.5 What the future holds	83
5 Benchmark Yield Curves in the Euro Market	85
<i>Philip D. Wooldridge</i>	
5.1 Introduction	85
5.2 Characteristics of benchmark yield curves	85
5.3 Benchmark tipping in European bond markets	86
5.4 Government securities as benchmarks	89
5.5 Interest rate swaps compete for benchmark status	90
5.6 Prospects for other nongovernment benchmarks	93
References	94
6 Some Facts on Pfandbrief Products in Europe	97
<i>Orazio Mastroeni</i>	
6.1 Introduction	97
6.2 Covered bonds, Pfandbrief products, and securitization	99
6.3 The German traditional and jumbo Pfandbrief markets	105
6.4 The French "Obligations Foncières"	110
6.5 The Spanish "Cedulas Hipotecarias"	110
6.6 The Luxembourg "Lettres de Gage"	111
6.7 Common aspects of Pfandbriefe products	112
6.8 Aspects characterizing the "quality" of Pfandbrief products	122
6.9 Conclusions and prospects	127
References	128
SECTION II COUNTRY STUDIES	131
7 Austria	133
<i>Vanessa Seconnino and Alham Yusuf</i>	
7.1 Introduction	133
7.2 Regulation	133
7.3 Credit ratings	137
7.4 Taxation	137
7.5 Austrian Stock Exchange (Wiener Börse)	138
7.6 The Austrian bond market	139
7.7 Conclusion	149
References	149

8 Belgium	151
<i>Jan Annaert and Marc J.K. De Ceuster</i>	
8.1 Introduction	151
8.2 History and structure of the Belgian public debt	151
8.3 Government bonds	153
8.4 Corporate bonds	161
8.5 Derivative products	163
References	164
9 Czech Republic	167
<i>Guan-Chye Ooi and Jonathan A. Batten</i>	
9.1 Introduction	167
9.2 Financial market regulation	169
9.3 Financial market participants	171
9.4 Money and fixed income instruments	174
9.5 Conclusion	179
References	179
10 Denmark	181
<i>Charlotte Christiansen, Tom Engsted, Svend Jakobsen, and Carsten Tanggaard</i>	
10.1 Introduction	181
10.2 History and structure of the Danish bond market	183
10.3 The Danish government bond market	184
10.4 The market for Danish mortgage-backed securities	186
10.5 Other fixed income instruments	191
10.6 Market participants, regulation, and trading	193
References	196
11 An Empirical Study of the Term Structure of Interest Rates in Denmark (1993–2002)	199
<i>Charlotte Christiansen, Tom Engsted, Svend Jakobsen, and Carsten Tanggaard</i>	
11.1 Introduction	199
11.2 The EHTS and its testable implications	200
11.3 Empirical results for Denmark (1993–2002)	202
11.4 Concluding remarks	208
References	208
12 Finland, Iceland, Norway, and Sweden	211
<i>Seppo Pynnönen</i>	
12.1 Introduction	211
12.2 Structure of the markets	214
12.3 Finland	217
12.4 Iceland	221

12.5	Norway	223
12.6	Sweden	225
12.7	Norex alliance	228
	Additional reading	228
13	France	229
	<i>David Edwards and Cameron Makepeace</i>	
13.1	Introduction	229
13.2	Financial system regulation	231
13.3	The French government bond market	235
13.4	The French nongovernment bond market	239
	References	242
14	Germany	243
	<i>Niklas Wagner</i>	
14.1	Introduction	243
14.2	Structure of the German bond market	245
14.3	Participants of the German bond market	249
14.4	The market for government bonds	257
14.5	Conclusion	262
	References	263
15	Greece	265
	<i>Thomas A. Fetherston</i>	
15.1	Introduction	265
15.2	The Greek bond market	266
15.3	Market participants and structure	267
15.4	The Greek government bond market	270
15.5	The nongovernment bond market	273
	References	274
16	Hungary	275
	<i>Nóra Németh and László Szilágyi</i>	
16.1	Introduction	275
16.2	History and structure of the Hungarian financial market	277
16.3	Participants and structure of the Hungarian bond market	279
16.4	The Hungarian government bond market	288
16.5	Semigovernment and corporate bond markets	293
16.6	Conclusions	296
	References	296
17	Italy	299
	<i>Walter Vecchiato</i>	
17.1	Introduction	299
17.2	The Italian government bond market	300

		304
17.3	Italian Stock Exchange (Borsa Italiana)	304
17.4	Conclusion	308
	References	309
18	The Netherlands	311
	<i>Albert Mentink</i>	
18.1	Introduction	311
18.2	The Netherlands	312
18.3	Dutch government bonds	316
18.4	Credit bonds	323
18.5	Categories of investors	327
18.6	Euronext Amsterdam and OTC market	329
18.7	Regulators	330
18.8	Conclusions	333
	Appendix: Useful websites	334
	References	335
19	Poland	337
	<i>Peter G. Szilagyi</i>	
19.1	Introduction	337
19.2	History and structure of the Polish bond market	339
19.3	Market participants and structure	341
19.4	The Polish Treasury market	348
19.5	The nongovernment bond market	352
19.6	Conclusion	356
	References	356
20	Portugal	357
	<i>Peter G. Szilagyi</i>	
20.1	Introduction	357
20.2	Recent history and structure of the Portuguese bond market	358
20.3	Market participants and structure	360
20.4	The Portuguese government bond market	366
20.5	Nongovernment bond market	369
	References	372
21	Russia	373
	<i>Leonid V. Philosophov and Vladimir L. Philosophov</i>	
21.1	History of the Russian bond market	373
21.2	The Russian economy in the postcrisis period	375
21.3	Regulation of the Russian bond market and its participants	376
21.4	Market for Russian state bonds	382
21.5	Corporate bonds	385
21.6	The market for Russian eurobonds	386
21.7	Conclusion	388

22 Spain	391
<i>Petra Péntzes</i>	
22.1 Introduction	391
22.2 History and structure of the Spanish bond market	392
22.3 Participants and structure of the Spanish bond market	395
22.4 The Spanish government bond market	400
22.5 Semigovernment and corporate bond markets	405
22.6 Conclusions	409
References	409
23 Switzerland	411
<i>Heinz R. Kubli</i>	
23.1 Introduction	411
23.2 Size and ratings of the Swiss bond market	412
23.3 Market participants and structure	414
23.4 Market conventions	418
23.5 Benchmarks	419
23.6 The Swiss federal bond market	421
23.7 Other bonds	422
23.8 Swiss and foreign convertible and “cum warrants” bonds	423
23.9 Foreign currency bonds	424
23.10 SWX Eurobonds	425
23.11 The Swiss repo market	426
23.12 Bank debentures (cash bonds or kassenobligationen)	426
23.13 Interest rate futures on the European Exchange (EUREX)	427
23.14 Conclusions	427
References	430
24 Turkey	431
<i>Caner Bakir and Kym Brown</i>	
24.1 Introduction	431
24.2 Recent history and structure of the Turkish bond market	433
24.3 Market participants and structure	435
24.4 The Turkish government bond market	441
24.5 Nongovernment bond market	445
References	447
25 United Kingdom	449
<i>Frank S. Skinner</i>	
25.1 Introduction	449
25.2 History and structure of the UK bond market	452
25.3 Market participants and structure	453
25.4 The United Kingdom government bond market	457

25.5	Corporate and semigovernment bond markets	463
25.6	Conclusions	466
	References	466
Index		467

Contributors

Jan Annaert

Department of Financial Economics, Ghent University, W. Wilsonplein 5d, 900 Gent, Belgium

Jan Annaert is Associate Professor of Finance at Ghent University where he is program director of the Master program in Banking and Finance. He holds a Ph.D. from the University of Antwerp. His research, teaching and consulting focus on portfolio theory, international finance and financial risk management. Currently, he works on credit risk modelling and estimation risk issues in portfolio selection. Before joining the department of Financial Economics at Ghent University he was a senior research fellow at the Fund for Scientific Research Flanders (Belgium) and assistant professor at the Erasmus University in Rotterdam.

Caner Bakir

Department of Accounting and Finance, Monash University, Victoria 3800, Australia

Dr Caner Bakir is Assistant Lecturer in Accounting and Finance Department at Monash University, Australia. For four years, he worked as Banking Specialist in Turkey. His current research interests include financial governance, government–business relations and international political economy. His most recent article was published by *Australian Journal of Political Science*. He is a Member of Editorial Board of *International Encyclopedia of Public Policy: Governance in a Global Age* (Routledge).

Jonathan A. Batten

College of Business Administration, Seoul National University, Sillim-Dong, Kwanak-Ku, Seoul, South Korea

Jonathan Batten is Professor of Finance at Seoul National University in Korea and co-editor of the Elsevier journal “*Research in International Business and Finance*”. His previous books include “Asia-Pacific Fixed Income Markets: An Analysis of the Region’s Money, Bond and Interest Derivative Markets”, co-edited with Thomas A. Fetherston and published by John Wiley & Sons, Singapore.

Kym Brown

Department of Accounting and Finance, Monash University, Victoria 3800, Australia

Kym Brown is based at Monash University, Melbourne, Australia. Her research interests relate to developing countries, particularly in the East Asian region. Topics of interest include macroeconomic assessments of bank efficiency, financial development and bond markets.

Charlotte Christiansen

Department of Finance, The Aarhus School of Business, 8210 Aarhus V, Denmark

Charlotte Christiansen is Associate Professor at Dept. of Finance, Aarhus School of Business and holds a PhD in finance (2001). Her main research interests are asset pricing, empirical finance, and the term structure of interest rates.

Marc J.K. De Ceuster

University of Antwerp, 2000 Antwerp, Belgium

Marc De Ceuster is Professor of Finance at the University of Antwerp and is program Director of the Master of Finance and Fiscal Sciences. Marc is also Director of Risk Management at Deloitte and Touche. He teaches and does consulting within the broad fields of financial economics, derivatives and risk management. Marc also organizes the yearly Deloitte and Touche Risk Conferences held in Antwerp. He has published in various international journals such as Journal of Empirical Research, Journal of Economic Surveys, Journal of Banking and Finance, European Financial Management.

David Edwards

Merchant Fraud & Acquiring Risk Management, National Australia Bank Limited, 9/120 Spencer Street, Melbourne, Victoria, 3000, Australia

David Edwards is an Acquiring Risk Management Analyst for the National Australia Bank in Melbourne. David graduated from Deakin University, Melbourne with a B.Com (Hons) in 2003 and has been working in banking since 2002. His other research interest areas include executive remuneration and corporate governance.

Tom Engsted

Department of Finance, The Aarhus School of Business, 8210 Aarhus V, Denmark

Tom Engsted is Professor and Head of Department at Dept. of Finance, Aarhus School of Business. Tom holds a PhD in economics (1993) from Aarhus School of Business. His main research interests are asset pricing, financial econometrics, and macroeconomics.

Thomas A. Fetherston

School of Business, University of Alabama at Birmingham, Birmingham, AL 35294, USA

Thomas Fetherston is Professor of Finance at the University of Alabama Birmingham. He is editor of the journal "*International Review of Financial Analysis*" and co-editor of "*Research in International Business and Finance*". His previous books include "*Asia-Pacific Fixed Income Markets: An Analysis of the Region's Money, Bond and Interest Derivative Markets*", co-edited with Jonathan A. Batten and published by John Wiley & Sons, Singapore.

Svend Jakobsen

Department of Finance, The Aarhus School of Business, 8210 Aarhus V, Denmark

Svend Jakobsen is Associate Professor at Dept. of Finance, Aarhus School of Business and holds a PhD in finance (1992). His main research interests are fixed income analysis, mortgage-backed securities, and pension funds.

Heinz R. Kubli

Aeschstrasse 2a, 8127 Forch, Switzerland

Heinz R. Kubli (1969), Dr. oec. publ., CFA, graduated in Economics and Business Administrations at the University of Zurich in 1995 and earned his doctorate in Finance in 2000. He is a

partner of Fundabilis GmbH, an owner-managed asset management company, and of Sensalis GmbH, a research company specialized in quantitative research, in Zurich, Switzerland.

Cameron Makepeace

Australian and New Zealand Banking Group, Collins St., Melbourne, Victoria 3000, Australia

Cameron Makepeace is an Assistant Manager for Corporate Banking with Australia and New Zealand Banking Group Limited. Cameron graduated from Deakin University, Melbourne in 2002 with an Honours in finance.

Orazio Mastroeni

Operations Analysis Division, Directorate General Operations, European Central Bank, Frankfurt am Main, Germany

Orazio Mastroeni is a graduate in Economic Studies at the University of Rome and took his Masters Degree in International Finance in the UK. With the creation of the European Central Bank in mid-1998 he joined the Directorate General Market Operations as Senior Economist, in charge of a team working on the Eurosystem's operational framework and eligible assets. He is the Rapporteur of the Committee in charge of revising the eligibility of assets for credit operations with the European Central Bank. He participated as a speaker in a number of international conferences and has lectured at the Universities of Rome and Frankfurt. He has contributed a number of articles on the operational framework and the Eurosystem's collateral framework in financial journals and in the Monthly Bulletin of the ECB.

Albert Mentink

Fixed Income Department, AEGON Asset Management in The Hague, The Netherlands

Albert Mentink received his Master's degree in Econometrics from the University of Groningen in 1996. Currently, he works as a senior fixed income analyst at AEGON Asset Management Netherlands. He is writing his PhD on empirical analyses of the euro bond market.

Nóra Németh

Department of Budgetary Supervision, Hungarian Ministry of Employment and Labour, Budapest, Hungary

Nóra Németh has recently been appointed deputy head of the Department of Budgetary Supervision in the Hungarian Ministry of Employment and Labour. She previously earned an MSc in Business Administration and a JD in law. Nora also has held positions at Ernst & Young and the Hungarian Prime Minister's Office.

Guan-Chye Ooi

Department of Accounting and Finance, Deakin University, Melbourne 3125, Australia

Guan-Chye Ooi is a financial analyst based in Singapore. Guan-Chye graduated from Deakin University, Melbourne with a B.Com (Hons) in 2003 and has been working in the finance industry since 2002. His other interests include earnings management generally and specifically the use of derivatives to smooth earnings of the firm.

Petra Péntzes

Kopint-Datorg Economic Research, Marketing and Computing Company, Budapest, Hungary

Petra Péntzes is an economic researcher at the Kopint-Datorg Economic Research Institute in Hungary. She previously held a similar position at the Research Institute of Economics and Entrepreneurship of the Hungarian Chamber of Commerce and Industry. Petra earned an MSc

in Business Administration at the Budapest University of Economic Sciences and Business Administration.

Leonid V. Philosophov

Analytic Department, Moscow Committee of Bankruptcy Affairs, Russia

Leonid Philosophov graduated in 1961 from the Moscow Institute of Physics and Technology. He has a PhD (Candidate of Sciences) dissertation, a D.Sc. degree and has been Professor of Informatics since 1992. He has worked most recently as chief of analytic department of Moscow Committee of Bankruptcy Affairs. His areas of scientific interests are bankruptcy prediction, credit risk, optimization of corporate capital structure.

Vladimir L. Philosophov

Analytic Department, Interregional Bankruptcy Service for Central Russia, Moscow, Russia

Vladimir L. Philosophov graduated in 1997 from the Moscow Aviation Institute (Economic Faculty). In 2001 he obtained his PhD (Candidate of Sciences) degree in Economics. Since 2001 he has been chief of analytic department of Interregional Bankruptcy Service for Central Russia. His areas of scientific interests are bankruptcy prediction, optimization of a firm's capital structure.

Seppo Pynnönen

Department of Mathematics and Statistics, University of Vaasa, Vaasa, Finland

Seppo Pynnönen is Professor of Statistics at the department of Mathematics and Statistics, University of Vaasa. He holds a Ph.D. in Statistics. His current research interest is in empirical finance, and he has published several refereed journal papers with his colleagues. The topics cover among others: information transmission in international stock markets, modeling bond yields, and news impact on stock returns.

Vanessa Seconnino

Department of Accounting and Finance, Deakin University, Melbourne 3125, Australia

Vanessa Seconnino completed a Bachelor of Arts/Bachelor of Commerce double degree and a Bachelor of Commerce (Honours) degree from Deakin University, Australia. On completion of studies began working for National Australia Bank in Melbourne, and is currently still working there. In addition Vanessa is undertaking further studies with the Securities Institute of Australia.

Frank S. Skinner

ISMA Centre, The University of Reading, Reading RG6 6BA, UK

Dr Frank Skinner is a Reader at the ISMA Centre located at the University of Reading, in the UK. He completed his Ph.D. in Finance at the University of Toronto and has held full time appointments in Canada and in the US. He has published in leading academic and practitioner journals including *The Journal of Banking and Finance*, *Journal of Fixed Income*, and the *Financial Analysts Journal*. His research is focused on debt markets and instruments, and is in demand as a consultant for such organizations as MTS, Office of Fair Trading and Watson Wyatt LLP.

László Szilágyi

Department of Economics, Budapest University of Technology and Economics, Budapest, Hungary

László Szilágyi has recently joined the Budapest University of Technology and Economics. His main areas of research include foreign direct investment directed to developing countries

and China's role in the world economy. He is also a member of the College of Social Theory at the Budapest University of Economic Sciences and Public Administration.

Peter G. Szilagy

Faculty of Economics and Business Administration, Tilburg University, Tilburg, The Netherlands

Peter Szilagy has recently joined Tilburg University, the Netherlands. His main research interests include international capital market development and corporate finance. He holds masters degrees from the Budapest University of Economic Sciences and Public Administration and the University of Western Sydney. He has previously worked as a freelance broadcaster for the BBC World Service in the U.K. and Australia.

Carsten Tanggaard

Department of Finance, The Aarhus School of Business, 8210 Aarhus V, Denmark

Carsten Tanggaard is a Professor of Finance at the Aarhus School of Business. His published research is about financial econometrics, fixed income, market microstructure, and the term structure of interest rates.

Walter Vecchiato

Head of Risk Management, Veneto Banca, Piazza G.B. Dall'Armi 1, 31044 Montebelluna (TV) Italy

Walter Vecchiato is Head of Risk Management and Research at Veneto Banca in Montebelluna Treviso, Italy. Previously, he was Head of Credit Derivatives Analysis at Banca Intesa in Milan, Italy. He was also Professor of Applied Statistics in University of Pavia, Italy and a Visiting Researcher in Financial Econometrics at University of California at San Diego, La Jolla. He has written and published on quantitative finance and risk management techniques and been a frequent speaker for many symposiums on Finance worldwide.

Niklas Wagner

Department of Financial Management and Capital Markets, Munich University of Technology, 80333 Munich, Germany

Niklas Wagner is a lecturer in finance at Munich University of Technology, Germany. He received a Ph.D. in finance from Augsburg University and had visiting appointments at the Haas School of Business, U.C. Berkeley and at Stanford GSB. He is a former faculty member of Dresden University of Technology's Business and Economics Department. His industry background is in portfolio management with HypoVereinsbank. His research interests cover the areas of applied financial econometrics including portfolio and risk management.

Philip D. Wooldridge

Monetary and Economic Department, Bank for International Settlements, 4002 Basel, Switzerland

Philip Wooldridge is a senior economist at the Bank for International Settlements. He writes regularly about financial markets for the *BIS Quarterly Review*. Prior to joining the BIS, Philip worked at the Bank of Canada as an emerging markets analyst. He holds a master's degree in economics from the University of Toronto and is a CFA charterholder.

Martin Young

Department of Finance, Banking and Property, College of Business, Massey University, Palmerston North, New Zealand

Martin Young is currently an Associate Professor of Finance at the College of Business, Massey University, New Zealand. Prior to this he spent four years as a Senior Fellow at the Nanyang Business School, Nanyang Technological University in Singapore. As well has his academic