# Private Equity

OPPORTUNITIES AND RISKS



H. KENT BAKER
GREG FILBECK
HALIL KIYMAZ

EDITORS

# Private Equity

OPPORTUNITIES AND RISKS

EDITED BY H. KENT BAKER

GREG FILBECK

and

HALIL KIYMAZ





Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide. Oxford is a registered trade mark of Oxford University Press in the UK and in certain other countries.

Published in the United States of America by Oxford University Press 198 Madison Avenue, New York, NY 10016, United States of America

#### © Oxford University Press 2015

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, without the prior permission in writing of Oxford University Press, or as expressly permitted by law, by license, or under terms agreed with the appropriate reproduction rights organization. Inquiries concerning reproduction outside the scope of the above should be sent to the Rights Department, Oxford University Press, at the address above.

You must not circulate this work in any other form and you must impose this same condition on any acquirer

Library of Congress Cataloging-in-Publication Data
Private equity: opportunities and risks / edited by H. Kent Baker, Greg Filbeck, and Halil Kiymaz.

p. cm. — (Financial markets and investments series)
Includes bibliographical references and index.
ISBN 978-0-19-937587-5 (alk. paper)
1. Private equity. 1. Baker, H. Kent (Harold Kent), 1944- II. Filbeck, Greg, 1963. III. Kiymaz, Halil, 1964-HG4751.P753 2015
332.63'2044—dc23

2014046431

## Private Equity

## FINANCIAL MARKETS AND INVESTMENTS SERIES H. Kent Baker and Greg Filbeck, Series Editors

Portfolio Theory and Management Edited by H. Kent Baker and Greg Filbeck

Public Real Estate Markets and Investments Edited by H. Kent Baker and Peter Chinloy

Private Real Estate Markets and Investments Edited by H. Kent Baker and Peter Chinloy

Investment Risk Management
Edited by H. Kent Baker and Greg Filbeck

Private Equity: Opportunities and Risks Edited by H. Kent Baker, Greg Filbeck, and Halil Kiymaz

## List of Figures

2.1	1970 to 2013 18
2.2	Firm Value 19
2.3	Poorly Performing Publicly Listed Companies in Different Financial
2.5	Markets, January 2014 20
2.4	Mechanics of a Leveraged Buyout 21
2.5	Typical Structure of a Private Equity Fund 22
4.1	Fund Return and the J-Curve Effect 55
5.1	Fundraising Levels in 2013 by Fund Type 68
5.2	Median Leveraged Buyout Debt Levels and EBITDA Multiples over Time
9.1	in the United States 72
5.3	Total Volume and Average Tranche Size of Syndicated Loans used in
	Leveraged Buyouts 73
5.4	The Value Creation Principle in Leveraged Buyouts 75
5.5	Choice of Exit Channels by Leveraged Buyouts, 1990 to 2013 79
5.6	Cash Multiples of Leveraged Buyouts by Exit Channel, 1990 to 2013 79
7.1	Size of the Early High Yield Market 102
7.2	Median Distressed Fund Return 103
7.3	Distressed Private Equity Funds Raised in North America 111
7.4	Merger and Acquisition Transaction Value, 1995 to 2009 112
7.5	Low Rated High Yield Issuance, 1995 to 2009 112
7.6	Acquisition Debt Multiples 113
7.7	Leveraged Finance Default Rates 113
7.8	European Leveraged Buyout Volume 114
7.9	Fundraising for European Distressed-Asset Private Equity 115
9.1	Beta: GRO Index vs. the S&P 500 Index 152
9.2	Beta: MEZ Index vs. the S&P 500 Index 153
9.3	Beta: Buyouts vs. the S&P 500 Index 153
9.4	Beta: Private Equity Index vs. the S&P 500 Index 154
10.1	Annual Median Net Internal Rates of Return by Vintage 170
10.2	Historical Private Equity Fundraising, 2008 to 2013 171
10.3	All Private Equity Annual Amount Called Up and Distributed,
	2003 to 2013 172

11.1	The Risk Profile of Venture Capital: Direct, Funds, and Fund-of-Funds 193			
11.2	Average Fund Performance per Vintage Year, 1990 to 2000 193			
12.1	Number of Financial Buyer Exits via Public Offerings in Different			
	Geographic Regions and Industries 201			
12.2	Number of Venture-Capital-backed Initial Public Offerings in the United			
	States, 1980 to 2013 202			
12.3	Comparison of the Short- and Long-Term Returns of Venture-Capital-			
	Backed and Non-Venture-Capital-Backed Initial Public Offerings in the			
	United States, 1980 to 2013 202			
13.1	Number of Global Buyout Exits, 2009 to 2013 216			
13.2	Number of Global Buyout-Backed Exits by Region, 1995 to 2013 216			
13.3	Number of Global Buyout-Backed Exits by Channel, 1995 to 2013 219			
13.4	Private Equity-Backed Exits by Type, 2006 to 2013 219			
13.5	Volume and Aggregate Value of PE-Backed IPOs: January 2005 to June			
	2014 225			
13.6	PE-Backed IPOs (Volume) and Market Conditions: January 2005 to June			
	2014 225			
13.7	Breakdown of the Aggregate Value of PE-Backed IPOs by the Region of			
	Portfolio Company: January 2005 to June 2014 227			
13.8	Breakdown of the Yearly Deal Value at the Completed Date per Industry			
	Sector 229			
14.1	Graph of the Top Three and Bottom Three Countries for PE			
	Attractiveness 245			
14.2	Global Private Equity Buyouts as a Proportion of Their 2006 Value 247			
14.3	Proportion of Buyout Deals by Geographic Region, 2006 to 2013 247			
14.4	Global Buyout Deals by Geographic Regions, 2006 vs. 2013 248			
14.5	Correlation Coefficient for Global Listed Private Equity Compared with			
	Other Assets 252			
14.6	Correlation Coefficient for PowerShares Global Listed Private Equity			
	Compared with Other Assets 254			
16.1	Top-to-Bottom Quartile Private Equity Internal Rate of Return Ranges by			
	Vintage Year 277			
16.2	Transition Matrix: Probability of Transition from One Quarter to			
	Another 282			
17.1	Types of Due Diligence 296			
17.2	Summary of the Process of Due Diligence 304			
18.1	Private Equity Deal Flows, 2004 to 2013 312			
18.2	Model Investment Structure of Private Equity 315			
19.1	An Overview of the Key Data Statistics of the Sample 336			
20.1	Illustration of Profit-Sharing between Limited Partners and General Partners 365			
22.1	Size of the Private Investment in Public Equity Market 399			
22.2	The Distribution of Private Investments in Public Equity by Industry 400			
22.3	Security Structure of Private Investments in Public Equity 402			
22.4	Investors in the Private Investment in Public Equity Market 404			
22.5	Alternative Financings for Small Firms: Unseasoned Issuers 414			

23.1	Post Initial Public Offering Performance of Blackstone and Fortress, 2007 to 2014 421
23.2	Worldwide Distribution of Listed Private Equity Companies, December 2013 421
23.3	Listed Private Equity Market Capitalization, 1993 to 2013 422
23.4	Listed Private Equity Absolute Return Performance, 2004 to 2014 422
24.1	Global Private Equity Investment Volume 442
24.2	Private Equity Investment Volume Differentiated by Region 443
24.3	Private Equity Investment Volume in Brazil, Russia, India, and China 444
24.4	Country Private Equity Attractiveness Score: First Half of Sample
	Countries 449
24.5	Country Private Equity Attractiveness Score: Second Half of Sample
	Countries 450
24.6	Attractiveness Rank Changes 451
24.7	Key Drivers of Brazil, Russia, India, and China's Private Equity
	Attractiveness 453
24.8	More Highly Granulated Determinants of Brazil, Russia, India, and China's Private Equity Attractiveness 454
24.9	Key Drivers of Private Equity Attractiveness for Indonesia, Mexico, the
	Philippines, and Turkey 455
24.10	More Highly Granulated Determinants of Private Equity Attractiveness for
	Indonesia, Mexico, the Philippines, and Turkey 456
24.11	Attractiveness Scores and Private Equity Activity of 118 Countries 457
24.12	Country Maturity Scores and Historic Private Equity Returns 459
25.1	Kernel Density Estimates for Liquidated Funds and Funds-of-Funds 473
25.2	Comparing Kernel Density Estimates for Both Samples 475
25.3	Funds per Vintage Year 475
26.1	Listings and Market Capitalization of Publicly Traded Private Equity 485
26.2	Organizational Forms of Listed Private Equity 486
26.3	Legal Structure of a Publicly Traded Private Equity Fund 487
26.4	Legal Structure of a Private Traded Public Equity Fund-of-Funds 488
26.5	Legal Structure of a Publicly Traded Management Company 489
26.6	Legal Structure of a Publicly Traded Investment Company 489
26.7	Net Asset Value Premium in Calendar Time 492
26.8	Premium in Event Time, Years from Initial Public Offer 496
26.9	Premium in Event Time, Years from Initial Public Offering by Fund Type 497

### List of Tables

2.1	Top 10 Private Equity Buyouts Ranked by Inflation-Adjusted Deal Value in 2014 Dollars 17
2.2	10 Largest Private Equity Funds 23
5.1	Compensation Structures in Leveraged Buyouts, 1990 to 2013 69
5.2	Restructuring Strategies in Leveraged Buyouts 78
6.1	Comparison of a Mezzanine Loan and Preferred Equity 92
7.1	TargetCo Debt Capital Structure 105
8.1	Components of the Four Major Cash Flow Definitions 126
8.2	Pros and Cons of Discounted Cash Flow, Adjusted Present Value, and
	Multiples-Based Valuation Methods 134
8.3	Able International: Balance Sheets for Years Ended December 31 135
8.4	Able International: Discounted Cash Flow Assumptions Based on Current
	Structure and Management 136
8.5	Able International: Discounted Cash Flow Assumptions with Private Equity
	Ownership 138
8.6	Able International: Multiples-Based Valuation 141
8.7	Able International: Adjusted Present Value Valuation Assuming Private
	Equity Ownership 143
9.1	Descriptive Statistics: January 2000 to December 2012, Using Monthly
	Data 152
9.2	Growth, Venture Capital, and a Few Buyouts: GRO 157
9.3	Buyouts 159
9.4	Mezzanine: MEZ 160
9.5	Private Equity Index 161
9.6	Illiquidity and the Cost of Equity of Private Equity: GLM Adjustment 163
11.1	Distinction between Privately Held and Private Equity 182
13.1	Private-Equity-Backed IPOs and Stock Market Evolution, 2005 to
	June 2014 224
13.2	Breakdown of the Aggregate Deal Value of Private-Equity-Backed IPOs by
	Region of the Portfolio Companies, 2005 to June 2014 226
13.3	Breakdown of the Yearly Aggregate Deal Value at the Completed Date per
	Portfolio Company by Industrial Sector, 2005 to June 2014 228
13.4	Exit Routes Overview 233

25.3

	0 F	TA	

14.1	The 10 Most Attractive Countries for Private Equity, 2010 to 2014 244
14.2	Brazil, Russia, India, and China Country Attractiveness Index Values, 2010 to 2014 245
14.3	Aggregate Value of Private Equity-Backed Buyout Deals by Region, 2006 to 2013 246
14.4	Annual Returns by Year for Various Assets, 2008 to 2013 251
14.5	Inverse Coefficient of Variation, 2008 to 2013 252
14.6	Global Listed Private Equity Correlation Coefficients, 2008 to 2013 253
14.7	PowerShares Global Listed Private Equity Correlation Coefficients, 2008 to 2013 253
16.1	Empirical Evidence on Private Equity Return Persistence 281
18.1	Comparing Private and Public Equity 313
18.2	Financial Assets of Institutional Investors by Country 323
18.3	Largest Retirement Funds 324
19.1	Data Panel and Descriptive Key Statistics 338
19.2	Data Panel Key Statistics 341
19.3	Impact of the Main Value Creation Levers on the Performance of Leveraged
	Buyout Transactions by Entry Year and Leveraged Buyout Transaction Type 347
19.4	EV/EBITDA Multiples in Leveraged Buyout Deals: The Impact of Different Value Creation Levers by Entry Year and Transaction Type 349
19.5	Decomposing Internal Rate of Return in Leveraged Buyout Transactions by Entry Year 350
19.6	Analysis of the Impact of Leveraged Buyout Ownership on Operating Performance 353
19.7	Expected versus Actual Performance of Leveraged Buyout Deals by Entry Year 354
20.1	Summary Statistics of Fee Terms 370
22.1	Size of the Private Investment in Public Equity Market, 1995 to 2012 399
22.2	Industry Distribution of Private Investments in Public Equity 400
22.3	Security Structure of Private Investments in Public Equity, 1995 to 2012 401
22.4	Private Investments in Public Equity in the Financial Sector, 1995 to 2012 403
22.5	Total Amount in USD Billion Invested by Investor Type, 1995 to 2012 404
22.6	Ranking of Placement Agents by Market Share 410
22.7	Alternative Financings for Small Firms, 2011 to 2012 414
22.8	The Emergence of at-the-Market Offering, 2009 to 2012 415
22.9	The Emergence of Confidentially Marketed Public Offerings, 2009 to 2012 416
23.1	Definitions and Summary Statistics 428
23.2	Comparisons of Descriptive Statistics between Listed Private Equity as a Part and not a Part of Investment Mandate 433
25.1	Calculation of Fees 469
25.2	Multiples 470
25.3	Sample 1: Liquidated Funds 472

25.4	Sample 2: Mature Funds 474
25.5	Liquidated Funds and Funds-of-Funds 476
25.6	Mature Funds and Funds-of-Funds 477
25.7	Certainty Equivalents 478
25.8	Levels of Indifference 478
25.9	Selection Ability 480
25.10	Marginal Coefficients of Risk Aversion 480

### Acknowledgments

"Editing is like walking across a room strewn with rose petals and thorns. When you can walk across mostly unbloodied, you're finished." —Richard Due

As the editors of *Private Equity: Opportunities and Risks*, we have many people to thank for their involvement in this book. Although the list is long, we have edited it to five: the chapter authors, professional staff at Oxford University Press, the indexer, our academic institutions, and families. The chapter authors deserve our deep appreciation for their excellent work and for enduring countless rounds of edits with few complaints. In the end, we could eventually walk across the room unbloodied. The team at Oxford University Press including but certainly not limited to Scott Parris (Editor), Cathryn Vaulman (Assistant Editor), Cherline Daniel (Sr. Project Manager) merit special thanks as does Claudie Peterfreund (Indexer). We also appreciate the support provided by our respective institutions—the Kogod School of Business at American University, the Behrend College at Penn State Erie, and the Crummer Graduate School of Business at Rollins College. Finally, our families have graciously allowed us to devote much of our time to this book project instead of to them. The authors dedicate this book to their families: Linda and Rory Baker; Janis, Aaron, Kyle, and Grant Filbeck; and Nilgun and Tunc Kiymaz.

#### About the Co-Editors

H. Kent Baker is a University Professor of Finance in the Kogod School of Business at American University. Professor Baker is an author or editor of 24 books including Investment Risk Management, Investor Behavior: The Psychology of Financial Planning and Investing, Market Microstructure of Emerging and Developed Markets, Behavioral Finance: Investors, Corporations, and Markets, Portfolio Theory and Management, and Survey Research in Corporate Finance. As one of the most prolific finance academics, he has published more than 160 articles in such journals as the Journal of Finance, Journal of Financial and Quantitative Analysis, Financial Management, and Financial Analysts Journal. He serves on the editorial boards of six journals and has consulting and training experience with more than 100 organizations. Professor Baker holds a BSBA from Georgetown University; MEd, MBA, and DBA degrees from the University of Maryland; and an MA, MS, and two PhDs from American University. He also holds CFA and CMA designations.

GREG FILBECK holds the Samuel P. Black III Professor of Finance and Risk Management at Penn State Erie, the Behrend College and serves as the Associate Director for the Black School of Business and the Department Chair for Finance & Economics. He formerly served as Senior Vice-President of Kaplan Schweser and held academic appointments at Miami University and the University of Toledo, where he served as the Associate Director of the Center for Family Business. Professor Filbeck is an author or editor of five books and has published more than 75 refereed academic journal articles in the Financial Analysts Journal, Financial Review, and Journal of Business, Finance, and Accounting among others. Professor Filbeck conducts training worldwide for candidates for the CFA, FRM™, and CAIA® designations. Professor Filbeck holds a BS from Murray State University, an MS from Penn State University, and a DBA from the University of Kentucky.

Halil Kiymaz is Bank of America Professor of Finance in the Crummer Graduate School of Business at Rollins College. He held positions at Bilkent University, University of Houston-Clear Lake, ECUST, Copenhagen Business School, Ada University, and Kadir Has University. Professor Kiymaz has published more than 70 articles in scholarly and practitioner journals and co-edited three books. His research has appeared in the Journal of Banking and Finance, Financial Review, Global Finance Journal, Journal of Applied Finance, Journal of Economics and Finance, and

Review of Financial Economics among others. Professor Kiymaz also serves on the editorial board of four journals and is the area editor of the International Journal of Emerging Markets. He has consulting and training experience with various organizations. Professor Kiymaz received a BS from the Uludağ University and an MBA, MA, and PhD from the University of New Orleans.

#### About the Contributors

Parvez Ahmed is an Associate Professor of Finance at the Coggin College of Business, University of North Florida (UNF) and serves as the Director of the Center for Sustainable Business Practices. He was named a U.S. Fulbright Scholar in 2009. Professor Ahmed previously taught at Penn State University-Harrisburg and the University of North Carolina at Charlotte where he was the founding faculty advisor for the student-managed investment fund. He has published in such journal as the Journal of Portfolio Management, Financial Management, Journal of Banking and Finance, Journal of Investing, Journal of Wealth Management, and Financial Review. He recently published Mutual Funds: Fifty Years of Research Findings. Professor Ahmed holds an MBA from Temple University and a PhD in finance from the University of Texas at Arlington.

EMMANUEL BOUTRON is an Associate Professor of Finance at the Management School and member of the research center CEROS at University of Paris Ouest Nanterre La Défense. He is also the head of the Master Business and Management and the General Management Program in Continuing Education (IFG—Laureate Group). Professor Boutron specializes in corporate finance and his primary research field focuses on IPOs. He recently examined SMEs (small and medium enterprises) financing through an applied research program funded by L'Observatoire du financement des petites et moyennes entreprises par le marché. Professor Boutron holds a PhD in finance from the University of Paris Ouest Nanterre La Défense.

ERIC BRAUNE is an Assistant Professor in Management and Strategy at INSEEC in Lyon. He served previously as the Regional Managing Director of a large French group and he is still committed to business incubators and Science Park in Lyon (France). His research mainly deals with innovation management, organizational theory, and corporate governance. He received a Master of Research in Economics Philosophy from Aix-en-Provence University and a PhD in management from IAE Aix-en-Provence.

**AXEL BUCHNER** is an Assistant Professor of Finance at the DekaBank Chair in Finance and Financial Control at Passau University, Germany. Before joining Passau University, he was a post-doctoral researcher and lecturer at Technical University of Munich and a consultant at the Center of Private Equity Research (CEPRES). At CEPRES, he specialized in private equity and equity-related consulting projects for

national and European organizations such as the German Federal Ministry of Economics and Innovation and the European Investment Bank (EIB), in addition to large institutional investors. His research focuses on issues in private equity, venture capital, and asset pricing. His teaching interests are in derivatives, empirical finance, portfolio theory, and asset pricing. He holds a master's degree in business administration from Munich University and a PhD in finance from Technical University of Munich.

JI-WOONG CHUNG is an Assistant Professor in Finance at Korea University Business School. His research includes corporate finance and financial markets with a particular emphasis on the area of private equity, hedge funds, and international capital flows. Before joining Korea University, he was an Assistant Professor at the Chinese University of Hong Kong and a Research Fellow at Institute of Economics and Finance. His research won the Wharton School WRDS Award for Best Empirical Paper in 2011 and Best PhD Paper Award from the Coller Institute of Private Equity at London Business School in 2010. He received a BA in economics and applied statistics from Yonsei University, Korea, and holds a PhD in finance from Fisher College of Business at The Ohio State University.

ALAIN COËN is a Professor of Finance at the Graduate School of Business (ESG) of the University of Quebec in Montreal (UQAM) and an associate researcher of the Ivanhoé Cambridge Real Estate Chair at ESG-UQÀM Graduate School of Business. He previously was an Associate Professor of Finance at EDHEC School of Management. Professor Coën has also been a Visiting Professor at Paris-Dauphine University, University of Paris-Ouest-Nanterre, EDHEC School of Management, Laval University, HEC-University of Liège, and University of Sherbrooke. His research focuses on asset pricing, international finance, hedge funds, REITs, business cycles, and financial econometrics. He has published in the Journal of Empirical Finance, Journal of Financial Research, Economics Letters, Finance Research Letters, Journal of Economics and Business, Journal of Multinational Financial Management, Finance, and Journal of Alternative Investments. He has also written a book on financial management. He holds an MA in economics from Laval University and an accreditation to supervise research (HDR) from Paris-Dauphine University. He obtained a PhD in finance from the University of Grenoble and a PhD in economics from the University of Paris I Panthéon-Sorbonne.

Douglas Cumming, CFA is a Professor of Finance and Entrepreneurship and the Ontario Research Chair at the Schulich School of Business, York University. He is a co-editor of Entrepreneurship Theory and Practice and has been a guest editor for 12 special issues of top journals. Professor Cumming has published more than 110 articles in leading refereed academic journals in finance, management, and law and economics, such as the Journal of Financial Economics, Review of Financial Studies, Journal of International Business Studies, and the Journal of Empirical Legal Studies. He is the coauthor of Venture Capital and Private Equity Contracting (Elsevier Academic Press, 2nd Edition, 2013), and Hedge Fund Structure, Regulation and Performance around the World (Oxford University Press, 2013). His work has been reviewed in numerous media outlets including The Economist, The New York Times, Canadian Business, the National Post, and The New Yorker. He holds a JD and a PhD in finance from the University of Toronto.

NA DAI is an Associate Professor of Finance at the School of Business at SUNY-Albany. Her research primarily focuses on venture capital, private equity, hedge funds, private investment in public equity, and small business financing. She has published in Financial Management, Journal of Banking and Finance, Journal of Corporate Finance, Journal of Empirical Finance, European Financial Management, Journal of Business Venturing, and Entrepreneurship Theory and Practice. She is the co-author of Hedge Fund Structure, Regulation and Performance around the World, published by the Oxford University Press. She has a BA (Honors) and an MA from Ren Min University of China and a PhD from the University of Kansas.

AURÉLIE DESFLEURS is an Associate Professor in the Accounting Department at the University of Sherbrooke in Canada. She previously was an Assistant Professor at the School of Accounting of Laval University. Her research focuses on financial analysts' forecasts, M&As, and international financial reporting statements. Professor Desfleurs has published in the Journal of Economics and Business, Journal of Multinational Financial Management, Journal of Derivatives and Hedge Funds, and Bankers, Markets and Investors. She graduated from EDHEC School of Management and obtained an MBA and a PhD in finance from Laval University. She is also a Chartered Professional Accountant in Canada.

SHANTANU DUTTA is an Associate Professor of Finance at the Telfer School of Management, University of Ottawa. Before his career in academe, he served as a finance manager at Lafarge, a world leader in construction materials. Professor Dutta's research focuses on M&As, media coverage and financial decisions, corporate governance, and dividend policy. He has published in such journals as Financial Management, Journal of Banking and Finance, Journal of Business Finance & Accounting, Journal of Multinational Financial Management, Multinational Finance Journal, and Corporate Governance—An International Review. He is a recipient of SSHRC grant and Barclays Global Investors Canada Research Award (2006) for the best paper on the Canadian security market. He has also received the Literati Network Awards for Excellence 2009 and 2014 for his published articles in the International Journal of Managerial Finance. Professor Dutta received a PhD from Carleton University.

GRANT FLEMING is a Founding Partner of Continuity Capital Partners and has worked in private capital markets in Asia for more than 10 years, with particular focus on private equity and credit and distressed opportunities. Before founding Continuity Capital Partners, he spent 10 years at Wilshire Associates Incorporated, researching and building Asian private equity and distressed debt portfolios for a global investor base located in Australia, Japan, the United States, and Europe. He was a member of the firm's global investment committee where he oversaw investments of more than \$6 billion in private equity, distressed debt, and special situations. He has held academic positions at the University of Auckland and the Australian National University. He has also published in such academic journals as Business History, Business History Review, Cambridge Journal of Economics, Entrepreneurship Theory and Practice, Journal of Banking and Finance, Journal of Corporate Finance, and Journal of Monetary Economics. He earned his BA, MA (Honors), and PhD in economics from the University of Auckland.

**DIDIER FOLUS** is a Professor of Finance at the Management School, University of Paris Ouest Nanterre La Défense. His primary research interests are in long-term investment exposure to risks and insurance securitization in a corporate risk management