

Prof. Dr. Frank Riedel

PROFESSOR FOR MATHEMATICS AND ECONOMICS

Academic Appointments

since 2022	Visiting Professor <i>Shandong University, China</i>
since 2015	Distinguished Visiting Professor <i>University of Johannesburg, South Africa</i>
2011/12	Visiting Fellow, ORFE Dept. <i>Princeton University, USA</i>
2007, 2010, 2016	Visiting Professor <i>University Paris I, Pantheon–Sorbonne, France</i>
since 2009	Director, <i>Center for Mathematical Economics,</i> <i>Bielefeld University</i>
since 2007	Full Professor <i>Bielefeld University</i>
2005, 2009	Visiting Professor <i>University Paris IX, Dauphine, France</i>
2003 – 2007	Associate Professor <i>Bonn University</i>
2002/03	Feodor Lynen–Grant from Alexander von Humboldt–Foundation <i>Stanford University, USA</i>
2002	Research Grant from German Research Foundation (DFG) <i>University of California, Berkeley, USA</i>
2000 – 2002	Assistant Professor (C1) <i>Humboldt–Universität zu Berlin</i>
1997 – 2000	Research Fellow <i>Humboldt–Universität zu Berlin</i>

Education

1998 – 2002	Habilitation in Economics, Humboldt–University at Berlin
1995 – 1998	Ph.D. in Economics, Humboldt–University at Berlin Graduiertenkolleg Angewandte Mikroökonomik
1989 – 1995	Diploma in Mathematics, Freiburg University

Honors and Grants

2023–	Speaker of the Research Training Group 2865 “Coping with Uncertainty in Dynamic Economies”
2019 – 22	Open Research Area for the Social Sciences, Leading Principal Investigator of Project “Ambiguity in Dynamic Environments”
2017 – 25	Collaborative Research Center 1283 “Taming Uncertainty . . . , Executive Board Member, Principal Investigator of Projects C3 and C5
2015 – 18	DFG–Project Ri 1128-7-1, Financial Markets under Knightian Uncertainty
2015 – 17	DFG–Project Ri 1128-4-2, Singular Control Games: Strategic Issues in Real Options and Dynamic Oligopoly under Knightian Uncertainty
2014	Excellence in Refereeing Award, <i>American Economic Review</i>
2013	Short List Deutscher Wirtschaftsbuchpreis(Prize for (General Interest) Books on Economic
2013 – 16	Joint DFG–ANR (Agence Nationale de la Recherche, France) Project Ri–1128-6-1, Ambiguity in Games: The Role of Uncertainty in Strategic Interactions
2012 – 15	DFG–Project Ri 1128-4-1, Singular Control Games: Strategic Issues in Real Options and Dynamic Oligopoly under Knightian Uncertainty
2009 – 15	Principal Investigator International Graduate School <i>Stochastics and Real World Models</i> joint school Bielefeld University and Chinese Academy of Sciences
2009 – 15	Principal Investigator International Graduate School <i>Economic Behavior and Interaction Models</i> , Bielefeld University and Paris I
2007 – 10	Project A6, SCRC 673, Alignment in Communication
2006 – 09	DFG–Project Ri 1128-3-1, Robust Irreversible Investment
2006 – 07	Excellence Cluster Mathematics: Foundations, Models, Applications, Director of Research Area H, Stochastic market models and aggregation
2003	Heisenberg–Grant by the German Research Foundation (DFG)
2002/03	Feodor–Lynen–Grant by the Alexander von Humboldt–Foundation
2002	Research Grant by the German Research Foundation (DFG)
1999	Humboldt Prize for Outstanding Dissertations
1995 – 98	Ph.D.–Program, Humboldt–University at Berlin

Offers

2007, University Vienna, (Successor of Egbert Dierker)

2010, Universität Bonn, Hausdorff Chair for Excellence, Mathematical Economics

Editorial Work

2009–	Editorial Board Economic Theory
2010 – 15	Editorial Board Journal of Mathematical Economics
2010 – 15	Editorial Board Mathematics and Financial Economics
2011 – 21	Editorial Board Finance and Stochastics
2012 – 15	Editorial Board Decisions in Economics and Finance
2012 – 15	Editorial Board Journal of Dynamics and Games
2014 – 15	Guest Editor, Dynamic Games and Applications, Special Issues on Population Games
2015–	Editor-in-Chief, Mathematics and Financial Economics

Consulting

1999, 2000	Bidding Strategies for Mannesmann Mobilfunk (now Vodafone) in Spectrum Auctions (1999 GSM Auktion, 2000 UMTS Auktion)
2008	Background Consulting on Bidding Strategies for an Electricity Auction for a Consulting Firm
2011, 2015	Report for the Prosecutor of the City of Bielefeld concerning Credit Derivative Trading by a County

Supervised Dissertations

1. Lars Koch, Bonn Graduate School of Economics, 2004–07
2. Xia Su, Bonn Graduate School of Economics, 2004–08
3. Marcelo Cadena, Bonn Graduate School of Economics, 2004–2009
4. Daniel Engelage, Bonn Graduate School of Economics, 2006–2009
5. Klaas Schulze, Bonn Graduate School of Economics, 2006–2009
6. Christina Matzke, Bonn Graduate School of Economics, 2006–2009
7. Monika Bier, DFG-Projekt Ri 1128–3–1, 2006–2009
8. Niko Noeske, extern, 2006–2011
9. Tatjana Chudjakow, EBIM, 2007–2011

10. Jan-Henrik Steg, EBIM, 2007–2010
11. Simon Krsnik, EBIM, 2007–2011
12. Jörg Vorbrink, IGK Stochastics and Real World Models, 2008–2011
13. Linda Sass, EBIM, 2009–2013
14. Christoph Diehl, EBIM, 2009–2014
15. Patrick Beissner, IGK Stochastics and Real World Models, 2010–2014
16. Jörg Bleile, EBIM, 2010–2014
17. Frederik Diermann, Bielefeld Graduate School of Economics, 2011–2016
18. Tobias Hellmann, Bielefeld Graduate School of Economics, 2011–2016
19. Lan Sun, Erasmus Mundus Doctorate in Economics, 2012 –2016
20. Benoît Decerf, Erasmus Mundus Doctorate in Economics, 2013 –2015
21. Geghard Bedrosian, IGK Stochastics and Real World Models, 2012–2015
22. Tolulupe Fadina, IGK Stochastics and Real World Models, 2012–2015
23. Nikoleta van Welbergen, Erasmus Mundus Doctorate in Economics, 2012–2016
24. Herman Demeze-Jouatsa, Bielefeld Graduate School of Economics, 2013–2018
25. Lazar Obradovic, Bielefeld Graduate School of Economics, 2013–2018
26. Julian Hölzermann, Bielefeld University, CRC 1283, 2017–2021
27. Zhaojun Xing, Bielefeld University, Bielefeld Graduate School of Economics and Management, since, 2016.
28. Marieke Pahlke, Bielefeld University, Bielefeld Graduate School of Economics and Management, 2015–2021
29. Gerrit Bauch, Bielefeld University, Bielefeld Graduate School of Economics and Management, since 2019

Selected Publications

1. Viability and Arbitrage under Knightian Uncertainty (with Matteo Burzoni and Mete Soner),
Econometrica, 89, 2021, 1207–1234
2. Equilibria under Knightian Price Uncertainty (with Patrick Beissner),
Econometrica, 87, 2019, 37-64
3. Optimal Stopping with Multiple Priors,
Econometrica, 77, 2009, 857–908
4. Other-regarding Preferences in General Equilibrium (with Martin Dufwenberg, Paul Heidhues, Georg Kirchsteiger and Joel Sobel)
Review of Economic Studies, 78, 2011, 613-639
5. Dynamic Coherent Risk Measures,
Stochastic Processes and Their Applications, 112, 2004, 185–200
6. Voronoi Languages (with Gerhard Jäger, Lars Metzger)
Games and Economic Behavior, 73, 2011, 517-537
7. Intertemporal Equilibria with Knightian Uncertainty (with Rose-Anne Dana)
Journal of Economic Theory 148, 2013, 1582-1605
8. The Foster-Hart Measure of Riskiness for General Gambles, (with Tobias Hellmann)
Theoretical Economics, 2015, 10, 1–9
9. Existence of Financial Equilibria in Continuous Time with Potentially Complete Markets (with Frederik Herzberg)
Journal of Mathematical Economics 49 (5), 2013, 398–404
10. On Irreversible Investment (with X. Su),
Finance and Stochastics, 15, 2011, 607-633,
11. On the Dynamic Foundation of Evolutionary Stability in Continuous Models (with Jörg Oechssler),
Journal of Economic Theory, 107, 2002, 223–252
12. Optimal Consumption Choice under Uncertainty with Intertemporal Substitution (with Peter Bank),
Annals of Applied Probability, 11, 2001, pp. 750-788

Publications

50. Optimal Consumption with Intertemporal Substitution under Knightian Uncertainty
Advances in Applied Probability, 54, 2022, 1222 - 1251, with Giorgio Ferrari and Hanwu Li
49. A Knightian Irreversible Investment Problem, Journal of Mathematical Analysis and Applications, 507, 2022, with Giorgio Ferrari and Hanwu Li
48. A Decomposition of General Premium Principles into Risk and Deviation, Insurance: Mathematics and Economics, 100, 2021, 193-209 with Max Nendel and Maren Schmeck
47. On a Class of Infinite-Dimensional Singular Stochastic Control Problems, SIAM Journal on Control and Optimization, 59(2), 2021, 1680–1704, with Salvatore Federico, Giorgio Ferrari, Michael Röckner
46. Viability and arbitrage under Knightian Uncertainty, Econometrica, 89, 2021, 1207–1234, with Matteo Burzoni, Mete Soner
45. Optimal Portfolio Choice with Ambiguous Interest Rates and Volatility, Economic Theory, 71, 2021, 1189–1202, with Qian Lin
44. Dynamically Consistent α -maxmin expected utility, Mathematical Finance, 30, 2020, 1073-1102 with Patrick Beissner, Qian Lin
43. Purification and Disambiguation of Ellsberg Equilibria, Economic Theory, 69, 2020, 595-636, with Benoît Decerf
42. Equilibria under Knightian Price Uncertainty, Econometrica, 87, 2019, 37-64 with Patrick Beissner
41. Dynamically Consistent Preferences Under Imprecise Probabilistic Information, Journal of Mathematical Economics 79, 2018, 117-124 with Jean-Marc Tallon and Vassili Vergopoulos
40. Non-Implementability of Arrow-Debreu Equilibria by Continuous Trading under Knightian Uncertainty, Finance and Stochastics 22, 2018, 603-620 with Patrick Beissner
39. Uncertain Acts in Games, Homo Oeconomicus 34, 2017, 275-292
38. Subgame-Perfect Equilibria in Stochastic Timing Games, Journal of Mathematical Economics 72, 2017, 36-50 with Jan-Henrik Steg
37. Kuhn's Theorem for Extensive Form Ellsberg Games, Journal of Mathematical Economics 68, 2017, 26–41 with Igor Mouraviev and Linda Sass

36. Continuous-Time Public Good Contribution under Uncertainty: a Stochastic Control Approach, *Applied Mathematics and Optimization* 75, 2017, 429-470 with Giorgio Ferrari and Jan-Henrik Steg
35. The Logit Dynamic for Games with Continuous Strategy Sets, *Games and Economic Behavior*, 91, 2015, 268–282, with Ratul Lahkar
34. Financial Economics without Probabilistic Prior Assumptions, *Decisions in Economics and Finance* 2015, 1, 75-91
33. The Foster-Hart Measure of Riskiness for General Gambles, *Theoretical Economics*, 2015, 10, 1–9, with Tobias Hellmann
32. A Dynamic Extension of the Foster-Hart Measure of Riskiness, *Journal of Mathematical Economics* 2015, 59, 66–70, with Tobias Hellmann
31. The Strategic Use of Ambiguity, *Theory and Decision*, 2014, 76, 469–509, with Linda Sass
30. Generalized Kuhn–Tucker Conditions for N-Firm Stochastic Irreversible Investment under Limited Resources, *SIAM Journal on Control and Optimization* 51, 2013, 3863–3885 with Maria Chiarolla and Giorgio Ferrari
29. Intertemporal Equilibria with Knightian Uncertainty, *Journal of Economic Theory* 148, 2013, 1582-1605 with Rose-Anne Dana
28. Existence of Financial Equilibria in Continuous Time with Potentially Complete Markets, *Journal of Mathematical Economics* 49 (5), 2013, 398–404 with Frederik Herzberg
27. The Best Choice Problem under Ambiguity (with Tatjana Chudjakow), *Economic Theory*, 2013, 54 (1), 77-97
26. Optimal Stopping under Ambiguity in Continuous Time, (with Xue Cheng), *Mathematics and Financial Economics*, 7, 2013, 29-68
25. Evolutionary Stability in First Price Auctions (with Fernando Louge), *Dynamic Games and Applications*, 1, 2012, 110–128 (with Fernando Louge)
24. On Irreversible Investment (with X. Su), *Finance and Stochastics*, 15, 2011, 607-633,
23. Voronoi Languages (with Gerhard Jäger, Lars Metzger) *Games and Economic Behavior*, 73, 2011, 517-537

22. Other-regarding Preferences in General Equilibrium (with Martin Dufwenberg, Paul Heidhues, Georg Kirchsteiger and Joel Sobel)
Review of Economic Studies, 78, 2011, 613-639
21. On Equilibrium Prices in Continuous Time (with Filipe Martins-da-Rocha),
Journal of Economic Theory, 145, 2010, 1086-1112
20. Optimal Stopping with Multiple Priors,
Econometrica, 77, 2009, 857-908
19. Brown-von Neumann-Nash Dynamics: the Continuous Strategy Case (with J.Hofbauer and J.Oechssler),
Games and Economic Behavior, 65, 2009, 406-429
18. Optimal Consumption Choice with Intolerance for Declining Standard of Living,
Journal of Mathematical Economics, 45, 2009, 449-464
17. Immediate Demand Reduction in Simultaneous Ascending Bid Auctions: A Uniqueness Result, (with Elmar Wolfstetter)
Economic Theory, 29, 2006, 721-726
16. Stochastic Equilibria For Economies Under Uncertainty With Intertemporal Substitution (with Felipe Martins-da-Rocha)
Annals of Finance, 2, 2006, 101-122
15. Stability of the Replicator Equation for a Single-Species with a Multi-Dimensional Continuous Trait Space (with Ross Cressman, Josef Hofbauer),
Journal of Theoretical Biology, 239, 2006, 273-288
14. Generic Determinacy of Equilibria with Local Substitution,
Journal of Mathematical Economics, 41, 2005, 603-616
13. Dynamic Coherent Risk Measures,
Stochastic Processes and Their Applications, 112, 2004, 185-200
12. Heterogeneous Time Preferences and Humps in the Yield Curve: The Preferred Habitat Theory Revisited,
European Journal of Finance, 10, 2004, 3-23
11. Implementing Efficient Market Structure(with Veronika Grimm, Elmar Wolfstetter),
Review of Economic Design, 7, 2003, 443-463
10. Low Price Equilibrium in Multi-Unit Auctions: The GSM Spectrum Auction in Germany (with Veronika Grimm, Elmar Wolfstetter),
International Journal of Industrial Organization, 21, 2003, 1557-1569

9. Arrow–Debreu Equilibria With Asymptotically Heterogeneous Expectations Exist,
Economic Theory, 21, 2003, pp.929-934
8. On the Dynamic Foundation of Evolutionary Stability in Continuous Models(with
Jörg Oechssler),
Journal of Economic Theory, 107, 2002, 223–252
7. The Third Generation (UMTS) Spectrum Auction in Germany (with Veronika Grimm,
Elmar Wolfstetter),
ifo studien, 48, 2002, 123–143
6. Optimal Consumption Choice under Uncertainty with Intertemporal Substitution
(with Peter Bank),
Annals of Applied Probability, 11, 2001, pp. 750-788
5. Existence of Arrow–Radner Equilibrium with Endogenously Complete Markets under
Incomplete Information,
Journal of Economic Theory, 97, 2001, pp. 109–122
4. Existence and Structure of Stochastic Equilibria with Intertemporal Substitution
(with Peter Bank),
Finance and Stochastics, 5, 2001, pp. 487-509
3. Evolutionary Dynamics on Infinite Strategy Spaces (with Jörg Oechssler),
Economic Theory 17, 2001, pp. 141-162
2. Non-Time Additive Utility Optimization - the Case of Certainty (with Peter Bank),
Journal of Mathematical Economics, 33, 2000, pp.271–290
1. Decreasing Yield Curves in a Model with an Unknown Constant Growth Rate,
European Finance Review, 4, 2000, pp.51-67.

Permanent Working Papers

1. Optimal Dynamic Choice of Durable and Perishable Goods (mit P.Bank)
Stanford University, 2003, Working Paper 03-009
2. A class of Heath-Jarrow-Morton models in which the unbiased expectations hypothesis
holds,
Humboldt–Universität zu Berlin, Discussion Paper 19, 1997, SFB 373

Popular Publications

1. Rettet die Sparer!, Frankfurter Allgemeine Zeitung, 7.12.2014, also published in Öko-
nomenstimme, <http://www.oekonomenstimme.org/artikel/2014/12/negative-zinsen-als-warnsignal-einer-kranken-wirtschaft/>

2. Die Banken beteiligen, aber richtig, Euro am Sonntag, 10.11.2013
3. Das Versagen der Ökonomen, Frankfurter Allgemeine Zeitung 20.10. 2013
4. Die Schuld der Ökonomen, Econ Verlag, 2013
5. Aus Steuerzahlersicht keine optimale Auktion, Handelsblatt, 12.04. 2010