

# Karl Schmedders

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CV: 23 August 2020

## Current Professional Positions

2019 – present	Professor of Finance, IMD Lausanne
2013 – present	Visiting Professor of Executive MBA Education, Kellogg School of Management, Northwestern University, U.S.A.

## Previous Professional Experience

2008 – 2020	Professor of Quantitative Business Administration, University of Zurich
2013 – 2017	Head of Knowledge Center and Member of the Management Board, Swiss Finance Institute
2011 – 2013	Visiting Associate Professor of Managerial Economics and Decision Sciences, Kellogg School of Management, Northwestern University, U.S.A.
2008 – 2010	Director of the Institute for Operations Research, University of Zurich
2008 – 2011	Associate Professor of Managerial Economics and Decision Sciences with tenure, on leave, Kellogg School of Management, Northwestern University, U.S.A.
2005 – 2008	Associate Professor at MEDS with tenure, Kellogg School of Management
2001 – 2005	Associate Professor at MEDS, Kellogg School of Management
1998 – 2001	Assistant Professor at MEDS, Kellogg School of Management
1996 – 1998	Visiting Fellow, Hoover Institution, Stanford University, U.S.A.

## Current Board Appointments

2017 – present	Vice President, Board of Directors, LPX Group, Zurich, Switzerland
2016 – present	Founding Partner, SYLVA AG, Zurich, Switzerland

## Education

1996	Ph.D., Operations Research, Stanford University
1992	M.S., Operations Research, Stanford University

## Research Interests

Asset Pricing, Computational Economics and Finance, Data Science

## Applied Interests

Asset Management, Business Analytics

## Peer-Reviewed Articles

- 2020 “Computing Economic Equilibria with Projection Methods,” with Alena Miftakhova and Malte Schumacher, *Annual Reviews of Economics*, 12 (2020) 317–53.
- “Statistical Approximation of High-Dimensional Climate Models,” with Alena Miftakhova, Kenneth L. Judd, and Thomas Lontzek, *Journal of Econometrics*, 214 (2020) 67–80.
- 2019 “The Economic and Public Health Impact of Influenza Vaccinations: Contributions of Swiss Pharmacies in the 2016/17 and 2017/18 Influenza Seasons and Implications for Vaccination Policy,” with Isabelle Brunner, Aline Wolfensberger, Peter W. Schreiber, and Stefan P. Kuster, *Swiss Medical Weekly*, 2019;149:w20161.
- 2018 “Higher-Order Effects in Asset-Pricing Models with Long-Run Risk,” with Walt Pohl and Ole Wilms, *The Journal of Finance*, 73 (2018) 1061–1111.
- 2017 “Optimal and Naive Diversification in Currency Markets,” with Fabian Ackermann and Walt Pohl, *Management Science*, 63 (2017) 3347–3360.
- 2016 “Asset Prices with Temporary Shocks to Consumption,” with Walt Pohl and Ole Wilms, *Journal of Economic Dynamics & Control*, 69 (2016) 152–178.
- 2015 “Margin Regulation and Volatility,” with Johannes Brumm, Michael Grill, and Felix Kubler, *Journal of Monetary Economics*, 75 (2015) 54–68.
- “A Polynomial Optimization Approach to Principal–Agent Problems,” with Philipp Renner, *Econometrica*, 83 (2015) 729–769.
- [“Supplement to ‘A Polynomial Optimization Approach to Principal–Agent Problems’,” *Econometrica Supplemental Material*, 83, <http://dx.doi.org/10.3982/ECTA11351>.]
- “Collateral Requirements and Asset Prices,” with Johannes Brumm, Michael Grill, and Felix Kubler, *International Economic Review*, 56 (2015) 1–25.
- 2012 “Finding all Pure-Strategy Equilibria in Dynamic and Static Games with Continuous Strategies,” with Ken Judd and Philipp Renner, *Quantitative Economics*, 3 (2012) 289–331.
- “Optimal Rules for Patent Races,” with Kenneth L. Judd and Sevin Yeltekin, *International Economic Review*, 53 (2012) 23–52.
- 2011 “Bond Ladders and Optimal Portfolios,” with Kenneth L. Judd and Felix Kubler, *Review of Financial Studies*, 24 (2011) 4123–4166.
- 2010 “Tackling Multiplicity of Equilibria with Gröbner Bases,” with Felix Kubler, *Operations Research*, 58 (2010) 1037–1050.
- “Non-Parametric Counterfactual Analysis in Dynamic General Equilibrium,” with Felix Kubler, *Economic Theory*, 45 (2010) 181–200.
- “Competitive Equilibria in Semi-Algebraic Economies,” with Felix Kubler, *Journal of Economic Theory*, 145 (2010) 301–330.
- 2007 “Two-Fund Separation in Dynamic General Equilibrium,” *Theoretical Economics*, 2 (2007) 135–161.
- “On Price Caps Under Uncertainty,” with Robert L. Earle and Tymon Tatur, *Review of Economic Studies*, 74 (2007) 93–111.
- 2006 “Reply to: Asset-Trading Volume with Dynamically Complete Markets and Heterogeneous Agents: Comment,” with Kenneth L. Judd and Felix Kubler, *Finance Research Letters*, 3 (2006) 102–105.
- “Computing Equilibria in Finance Economies with Incomplete Markets and Transaction Costs,” with P. Jean-Jacques Herings, *Economic Theory*, 27 (2006) 493–512.
- 2005 “Approximate versus Exact Equilibria in Dynamic Economies,” with Felix Kubler, *Econometrica*, 73 (2005) 1205–1235. [Reprinted in: *Computational Aspects of General Equilibrium Theory: Refutable Theories of Value*, ed. by Donald J. Brown and Felix Kubler, Springer-Verlag, Heidelberg, 2008.]
- “Excess Price Volatility and Financial Innovation,” with Alessandro Citanna, *Economic Theory*, 26 (2005) 559–587.
- 2003 “Stationary Equilibria in Asset-Pricing Models with Incomplete Markets and Collateral,” with Felix Kubler, *Econometrica*, 71 (2003) 1767–1793. [Reprinted in: *Incomplete Markets Volume II: Infinite Horizon Economies*, ed. by Michael Magill and Martine Quinzii, Edward Elgar Publishing Ltd., Cheltenham, UK, 2008.]

- 2003 “Asset-Trading Volume with Dynamically Complete Markets and Heterogeneous Agents,” with Kenneth L. Judd and Felix Kubler, *The Journal of Finance*, 58 (2003) 2203–2217. [This paper received a nomination for the 2003 Smith-Breeden Prize.]
- “Generic Inefficiency of Equilibria in the General Equilibrium Model with Incomplete Asset Markets and Infinite Time,” with Felix Kubler, *Economic Theory*, 22 (2003) 1–15.
- 2002 “Recursive Equilibria in Economies with Incomplete Markets,” with Felix Kubler, *Macroeconomic Dynamics*, 6 (2002) 284–306.
- 2001 “Incomplete Markets, Transitory Shocks, and Welfare,” with Felix Kubler, *Review of Economic Dynamics*, 4 (2001) 747–766.
- “Monopolistic Security Design in Finance Economies,” *Economic Theory*, 18 (2001) 37–72.
- 2000 “Computing Equilibria in Stochastic Finance Economies,” with Felix Kubler, *Computational Economics*, 15 (2000) 145–172.
- “Computing Equilibria in Infinite Horizon Finance Economies: The Case of One Asset,” with Ken Judd and Felix Kubler, *Journal of Economic Dynamics and Control*, 24 (2000) 1047–1078.
- 1999 “A Homotopy Algorithm and an Index Theorem for the General Equilibrium Model with Incomplete Asset Markets,” *Journal of Mathematical Economics*, 32 (1999) 225–241.
- “General Equilibrium Models and Homotopy Methods,” with B. Curtis Eaves, *Journal of Economic Dynamics and Control*, 23 (1999) 1249–1279.
- 1998 “A Cellation of the Grassmann Manifold,” with B. Curtis Eaves, *Mathematical Programming*, 83 (1998) 253–262.
- “Computing Equilibria in the General Equilibrium Model with Incomplete Asset Markets,” *Journal of Economic Dynamics and Control*, 22 (1998) 1375–1401.

## Peer-Reviewed Articles in Volumes and Conference Issues

- 2014 “Computing All Solutions to Polynomial Equations in Economics,” with Felix Kubler and Philipp Renner, in: *Handbook of Computational Economics, Volume 3*, ed. by Karl Schmedders and Kenneth L. Judd, North-Holland (Elsevier), Amsterdam, The Netherlands, 2014, pp. 599–652.
- 2010 “Uniqueness of Steady States in Models with Overlapping Generations,” with Felix Kubler, *Journal of the European Economic Association*, 8 (2010) 635–644.
- 2008 “Numerical Optimization Methods in Economics,” in: *The New Palgrave: A Dictionary of Economics*, 2nd Edition, 2008.
- 2004 “Effects of Asset Market Structure on Welfare and Trading Volume,” with Kenneth L. Judd and Felix Kubler, in: *Assets, Beliefs, and Equilibria in Economic Dynamics, Essays in Honor of Mordecai Kurz*, ed. by C. D. Aliprantis, Kenneth J. Arrow, Peter Hammond, Felix Kubler, Ho-Mou Wu, and Nicholas C. Yannelis, 2004, Springer-Verlag, New York.
- 2003 “Computational Methods for Dynamic Equilibria with Heterogeneous Agents,” with Kenneth L. Judd and Felix Kubler, in: *Advances in Economic Theory and Econometrics Volume III*, ed. by Mathias Dewatripoint, Lars P. Hansen, and Steven J. Turnovsky, Econometric Society, New York, 2003.
- 1999 “The Impact of Portfolio Constraints in Infinite-Horizon Incomplete-Markets Models,” with Kenneth L. Judd and Felix Kubler, in: *The Theory of Markets*, ed. by P. Jean-Jacques Herings, Gerard van der Laan, and Dolf Talman, North-Holland (Elsevier), Amsterdam, The Netherlands, 1999.

## Non-Peer-Reviewed Articles

- 2012 “Financial Innovation and Asset Price Volatility,” with Felix Kubler, *American Economic Review (Papers & Proceedings)*, 102 (2012) 147–151.
- 2003 Book Review of “Applied Computational Economics and Finance“ by Mario J. Miranda and Paul L. Fackler, *The Economic Journal* 113 (2003) F661–F663.

## Peer-Reviewed Articles in Other Fields

- 2010 “Review of Outcomes from a Change in Faculty Clinic Management in a U.S. Dental School,” with Nader A. Nadershahi, Eric S. Salmon, Nava Fathi, and Jace Hargis, *Journal of Dental Education*, 74 (2010) 961–969.
- 2003 “The Fibonacci Sequence: Relationship to the Human Hand,” with Andrew Park, John Fernandez and Mark Cohen, *The Journal of Hand Surgery*, 28 (2003) 157–160.

## Working Papers

- 2020 “Re-use of Collateral: Leverage, Volatility, and Welfare,” with Johannes Brumm, Michael Grill, and Felix Kubler.  
“Asset Pricing with Heterogeneous Agents and Long-Run Risk,” with Walt Pohl and Ole Wilms.  
“Increasing the Value of Search Subscriptions for Housing Market Analyses,” with Andy Egger, Vanessa Kummer, and Maik Meusel.
- 2019 “A Large-Scale Optimization Model for Replicating Portfolios in the Life Insurance Industry,” with Maximilian Adelman, Lucio Fernandez-Arjona, and Janos Mayer.  
“Dynamic Principal–Agent Models,” with Philipp Renner.
- 2018 “Life-cycle Portfolio Choice, the Wealth Distribution and Asset Prices,” with Felix Kubler.
- 2016 “Long-Run UIP Holds Even in the Short Run,” with Fabian Ackermann and Walt Pohl, Swiss Finance Institute Research Paper # 13–31.
- 2013 “The Perils of Performance Measurement in the German Mutual-Fund Industry,” with Philip Böhme and Walt Pohl, Swiss Finance Institute Research Paper # 13–30.

## Edited Volumes

- 2014 “Handbook of Computational Economics,” Volume 3, with Kenneth L. Judd, North-Holland (Elsevier), Amsterdam, The Netherlands.
- 2012 “Operations Research Proceedings 2011: Selected Papers of the International Conference on Operations Research (OR 2011), August 30 – September 2, 2011, Zurich, Switzerland,” with Diethard Klatte and Hans-Jakob Lüthi, Springer, Heidelberg.

## Case Studies

- 2017 “Closing Time,” with Jan Hilario, Maik Meusel, and Walt Pohl, Kellogg Case 5–217–258.
- 2016 “Solid as Steel: Production Planning at thyssenkrupp,” with Markus Schulze, Kellogg Case 5–215–250.
- 2013 “Germany’s Bundesliga: Does Money Score Goals?” with Charlotte Snyder and Sophie Tinz, Kellogg Case 5–113–002.
- 2012 “Hollywood Rules,” with Ute Schaedel and Charlotte Snyder, Kellogg Case 5–111–012.
- 2011 “Arbor City Community Foundation, Parts (A), (B), and Executive Education Version,” with Michael Stritch and Russell Walker, Kellogg Cases 5–310–502(A), 5–310–502(B), and 5–310–503.
- 2008 “Milk and Money,” with Patrick Johnston and Charlotte Snyder, Kellogg Case 5–407–754.  
“Spiegel Online,” with Armin Rott, Kellogg Case 5–108–007.
- 2007 “Fueling Sales at EuroPet,” with I. Campbell Lyle, Kellogg Case 5–307–505.

2006	“Pedigree vs. Grit: Predicting Mutual Fund Manager Performance“ with Peter Eso, Graeme Hunter, and Peter Klibanoff, Kellogg Case 5–407–755. “Orangia Highways Part (A) and Part (B),” with Peter Eso, Graeme Hunter, and Peter Klibanoff, Kellogg Cases 5–106–007(A) and 5–106–007(B).
2000	A collection of 20 case studies in Management Science, with Molly Stephens, appeared in: Introduction to Management Science: A Modeling and Case Studies Approach With Spreadsheets, Frederick S. Hillier and Mark S. Hillier, Irwin/McGraw-Hill, Editions One–Six, 2000, ‘02, ‘08, ‘10, ‘13, ‘18. in: Introduction to Operations Research, Frederick S. Hillier, and Gerald J. Lieberman, McGraw-Hill, Editions Seven–Nine, 2001, ‘05, ‘09;

## Editorial Service

2015 – 2017	Area Editor, <i>Operations Research</i>
2013 – 2017	Co-Editor, <i>Quantitative Economics</i>
2011 – 2014	Associate Editor, <i>Mathematical Methods of Operations Research</i>
2010 – 2013	Associate Editor, <i>Journal of Mathematical Economics</i>
2000 – 2011	Associate Editor, <i>Journal of Economic Dynamics and Control</i>

## Fellowships and Honors

2006	Honorary Medal (Ehrenmedaille) of WHU, Otto Beisheim School of Management
1993 – 1995	Doctoral Fellowship, Cusanuswerk Foundation
1990	National Jubiläums-Staatsstiftung Award for Business Vordiplom score among best in Germany in 1989
1989 – 1993	Fellowship, Cusanuswerk Foundation

## Teaching Awards

2017	Best Faculty Award, Kellogg-HKUST EMBA program, Class KH19
2008, ‘09, ‘11–‘15, ‘17, ‘19 2014, ‘16	Best Teacher Award, Kellogg-WHU EMBA program, Classes KW10, KW11, KW13, KW14, KW15, KW16, KW17, KW19, KW21 Superior Teaching Award, Rochester-Bern EMBA program, Class RB19, RB21
2014	Best Teacher Award, Kellogg-Recanati EMBA program, Class KR17
2009, ‘11, ‘12, ‘13, ‘15	Outstanding Professor Award, Kellogg EMBA program, Classes EMP76, EMP83, EMP87, EMP91, EMP99
2000, ‘02, ‘04, ‘06, ‘08	Chairs’ Core Course Teaching Award, Kellogg School of Management
2002, ‘03, ‘04	WHU Best Teacher Award (in Winter Semester), WHU Koblenz, Germany
2002	L.G. Lavengood Professor of the Year, Kellogg School of Management
1996	Walter J. Gores Award, Stanford University
1996	Best Engineering Professor of the Year Award, Stanford Society of Women Engineers

## Research Grants

2017 – 2019	CTI Project, “DLX (Direct Lending Index): Listed Debt indices and web-based analysis tool for valuation of ‘Listed Alternatives’ as a decision support tool for investors, asset managers, auditors and regulators”
2013 – 2015	CTI Project, “New indices and analyses of ‘listed infrastructure’ in the energy sector for improved and more reliable decision-making of politicians, citizens, investors and companies”
2006 – 2009	Co-Principal Investigator, National Science Foundation (NSF), U.S.A.
2003, ‘05	Research Grants from The Searle Fund
2003	Research Project with U.S. Navy
1997 – 1998	Post-Doctoral Research Grant from Deutsche Forschungsgemeinschaft [National Science Foundation of Germany]

## Supervised Dissertations

2019	Maik Meusel, “Computational Design of an Integrated Learning and Assessment Platform for Higher Education,” CEO SYLVA AG José Parra Moyano, “Three Essays on the Management and Economics of Blockchain-Based Systems,” assistant professor, Copenhagen Business School Alena Miftakhova, “Three Essays in Economics of Climate Change,” post-doc, ETH Zurich Andreas Thomann, “Essays in Numerical Finance” external doctoral student
2017	Philipp Ott, “Three Essays in Computational Economics,” first job: Competition Commission of Switzerland Maximilian Adelman, “Three Essays in Portfolio Optimization,” UBS
2016	Maximilian Werner, “Three Essays in Computational Methods and Macro Financial Modeling,” PWC
2016	Ole Wilms, “Four Essays in Asset Pricing,” assistant professor of finance at University of Tilburg (since 2017)
2015	Gregor Reich, “Three Essays in Computational Economics,” winner of the 2015 Mercator Award for Junior Researchers, postdoctoral research fellow at the Hoover Institution, Stanford, U.S.A. (2017–18)
2014	Fabian Ackermann, “Three Essays on the Efficiency of Selected Financial Markets,” external doctoral student, Zurich Kantonal Bank
2013	Philipp Renner, “Applications of Algebraic Geometry in Economics,” postdoctoral research fellow at the Hoover Institution, Stanford, U.S.A. (2013–16), senior lecturer (with tenure) University of Lancaster (since 2017)

## Post-doctoral Placements

2019	Malte Schumacher, Deloitte
2017	Walt Pohl, first job: assistant professor of finance, NHH Norwegian School of Economics
2016	Thomas Lontzek, full professor (W3) of economics, RWTH Aachen University