Curriculum Vitae

Elisa Nicolato

Business Address:
Department of Economics and Business Economics
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Personal information

Born in Lonigo (Vicenza, Italy) on June 25th, 1969.

Marital status: married.

Children: 1 daughter.

Education and Qualifications

Laurea degree with honors (110/110 *cum laude*) in Mathematics at University of Padova, July 1996.

Ph.D. degree in Computational Mathematics at University of Padova, February 2000.

Diploma in Higher Education Pedagogy, Aarhus School of Business, Aarhus University, April 2009.

Positions

Associate Professor at the Department of Economics and Business Economics, Business and Social Sciences, Aarhus University, since September 2017.

Teaching Associate Professor at the Department of Economics and Business Economics, Business and Social Sciences, Aarhus University, since July 2011.

Temporary Associate Professor at the Department of Business Studies, Aarhus School of Business, Aarhus University, Denmark, July 2009–July 2011.

Assistant Professor at the Department of Business Studies, Aarhus School of Business, Aarhus University, Denmark, October 2004–July 2009.

Postdoctoral researcher at the Department of Mathematical Sciences, Aarhus University, Denmark, June 2001–April 2003.

Postdoctoral researcher by invitation at the Vienna University of Technology, Department of Statistics, Probability Theory and Actuarial Mathematics, Austria, March 2001–June 2001

Postdoctoral researcher at the Center for Mathematical Physics and Stochastics and Center for Analytical Finance, Aarhus University, Denmark, February 2000–February 2001.

Visiting Ph.D. student at the Aarhus University, Department of Mathematical Sciences, September 1997–January 2001.

Research Interests

Financial Engineering and Quantitative Finance. In particular:

Numerical methods for robust and efficient derivatives pricing;

Lévy and Affine Processes;

Stochastic Volatility Models.

Ph.D. Theses Supervision

Andrea Barletta, *Consistent Modelling and Efficient Pricing of Volatility Derivatives*, Ph.D. awarded in September 2016.

Camilla Pisani, *Volatility and Correlation in Financial Markets: Theoretical Developments and Numerical Analysis*, Ph.D. awarded in March 2016.

David Sloth Pedersen, *A Journey into the Dark Arts of Quantitative Finance*, Ph.D. awarded in January 2014.

Recent Invited Visits and Communications

Imperial College, London, January 2016.

Berlin - Padova Young researchers Meeting in Probability, Weierstrass Institute for Applied Analysis and Stochastics, Berlin, October 2014 - main speaker.

Bachelier Finance Society, Eighth World Congress, Brussels, June 2014.

New Thinking in Finance, Lloyds Head Office, London, February 2014. - main speaker.

Quantitative Methods in Finance Conference 2013, Sydney, December 2013.

Conference in honor of the 70th birthday of Wolfgang J. Runggaldier, Padova, Italy, September 2012 - main speaker.

Frankfurt School of Finance & Management, March 2011.

ETH Zurich, D-Math, October 2010

Quantitative Methods in Finance Conference 2009, Sydney, December 2009.

33rd Conference on Stochastic Processes and Their Applications, Berlin, July 2009 - main speaker.

19th Annual Derivatives Securities and Risk Management Conference, Arlington, Virginia, April 2009

Quantitative Methods in Finance Conference 2008, Sydney, December 2008.

Bachelier Finance Society, Fifth World Congress, London, July 2008.

Organization of Research Activities

Organizer of the PhD course: *Characterisation of the Volatility Surface: Existence, Models, Asymptotics*, Lectured by Antoine Jacquier, March 2016.

Organizer of the PhD course: *Analytical Approximations for P(I)DE's and Application to Mathematical Finance*, Lectured by Stefano Pagliarani, November 2015

Organizer of the Workshop: *Modelling of Financial Markets* - August 2014

Organizer of the *Aarhus Quant Factory* -A series of events with focus on Quantitative Finance - January 2014

- PhD course: *Understanding and Managing Model Risk* lectured by Massimo Morini.
- PhD course: *Lectures on Capital Requirements, Credit Risk, Collateral and Centralized Clearing* lectured by Leif Andersen, Bank of America Merril Lynch, and Jesper Andreasen, Danske Bank.
- Symposium: *Aarhus Quant Day.*

Organizer of the PhD course: *New Approaches to Option Valuation and Portfolio Selection*, Lectured by Peter Christoffersen, January 2013.

Organizer of the PhD course: *Credit Modeling and Counterparty Risk Pricing and Restructuring*, Lectured by Damiano Brigo, May 2012.

Organizer of the PhD course: *Commodities and Commodity Derivatives*, Lectured by Helyette Geman, January 2011.

Organizer of the PhD course: *Stochastic Processes in Financial Applications*, Lectured by Dilip B. Madan, January 2010.

Organizer of the PhD course: *Credit Risk and Bubbles*", Lectured by Robert A. Jarrow, June 2009.

Organizer of the Workshop: *Recent Advances in Interest Rate Modeling*, August 2008.

External Funding activities

Interplay between volatility demand, hedging and market disruptions. Joint with Thomas Kokholm (grant holder). 2021–2023.

Seed funding for collaboration between Aarhus University and Hamburg University. 2014–2015.

HPCFinance project joint with Peter Løchte Jørgensen – funding from the European Commission. 2013–2016.

Ph.D. Evaluation Committees

Nina Lange, Copenhagen Business School, Department of Finance. January 2017.

Jun Hu, Tampere University of Technology, Department of Industrial Management. September 2016.

Hanna Marta Zdanowicz, Oslo University, Department of Mathematics. February 2016.

Qing Liu, Imperial College, London, Department of Mathematics. January 2016.

Orimar Sauri, Aarhus University, Department of Economics and Business Economics. December 2015.

André Ribeiro, University of Copenhagen, Department of Mathematical Sciences. August 2015.

Morten Karlsmark, University of Copenhagen, Department of Mathematical Sciences. November 2013.

Henrik Nørholm, Aarhus University, Department of Economics and Business Economics. August 2012.

Claudio Fontana, University of Padova, Department of Mathematics. March 2012.

Gabriel G. Drimus, University of Copenhagen, Department of Mathematical Sciences. September 2011.

Leonidas Tsiaras, Aarhus School of Business, July 2010.

Teaching Experience

Advanced Derivatives Modelling, MA / Ph.D. Department of Mathematics, Aarhus University. Fall 2015–Fall 2018.

Pricing and Hedging of Derivatives, MA / Ph.D. Department of Mathematics, Aarhus University. Fall 2014–Fall 2022.

Financial Engineering, MA. Department of Economics and Business Studies, Aarhus University. Spring 2012–Spring 2017. Fall 2021–Fall 2022.

Fixed Income and Derivative Securities, MA. Department of Business Studies, Aarhus School of Business, Aarhus University. Spring 2009-2011.

Advances in Financial Modeling, MA. Department of Business Studies, Aarhus School of Business, Aarhus University. Fall 2010.

Mathematics, BA. Department of Business Studies, Aarhus School of Business, Aarhus University. Fall 2010–Fall 2012.

Financial Engineering, MA. Department of Business Studies, Aarhus School of Business, Aarhus University. Fall 2005, Fall 2006, Fall 2007, Fall 2008.

Asset Pricing II, MA. Department of Business Studies, Aarhus School of Business, Aarhus University. Fall 2007.

Fixed Income Securities, series of lectures. Part of the MA-course *Foundations of Empirical Finance*, Department of Economics, Aarhus University. Spring 2002.

Mathematics for Economists, Ph.D. Department of Economics, Aarhus University. Fall 2001, Fall 2002.

Publications

Nicolato, E. & Kloster, K. T. "An orthogonal expansions approach to joint SPX and VIX calibration in the SVJJ model". 2023, About to be submitted to *Quantitative Finance*

Nicolato, E. & Sloth, D.:"Simple Smiles for the Mixing Setup". 2022, Submitted to *International Journal of Theoretical and Applied Finance*

Barletta, A., Nicolato, E. & Pagliarani, S.: "The Short-time Behaviour of VIX Implied Volatilities in a Multifactor Stochastic Volatility Framework", *Mathematical Finance*, 2019, Volume 29, 928–966.

Barletta, A. & Nicolato, E.: "Orthogonal Expansions for VIX Options Under Affine Jump-Diffusions". *Quantitative Finance*, 2018, Volume 18, 951–967.

Nicolato, E., Pisani, C. & Sloth, D. : "The impact of jump distributions on the implied volatility of variance". *Siam Journal on Financial Mathematics (SIFIN)*, 2017, Volume 8, 28–53.

Nicolato, E.& Sloth, D. : "Risk adjustments of option prices under time-changed dynamics". *Quantitative Finance*, 2014, Volume 14, 125–141.

Kokholm, T. & Nicolato, E.: "Sato Processes in Default Modelling", *Applied Mathematical Finance*, 2010, Volume 17, 377-397.

Nicolato, E. & Venardos, E.: "Option Pricing in Stochastic Volatility Models of the Ornstein–Uhlenbeck Type", *Mathematical Finance*, 2003, Volume 13/4, 445–466.

Barndorff-Nielsen, O.E., Nicolato, E. & Shephard, N.: "Some recent developments in stochastic volatility modelling", *Quantitative Finance*, 2002, Volume 2, 11–23.

Nicolato E. & Runggaldier W.J.: "A Bayesian Dynamic Programming Approach to Optimal Maintenance combined with Burn–in", *Annals of Operation Research* 91 (1999).

Preprints and Work in progress

Nicolato, E. & Kloster, K. T. "An orthogonal expansions approach to joint SPX and VIX calibration in the SVJJ model". About to be submitted.

Nicolato, E. & Kloster, K. T. "Polynomial Approximations For Rough Heston Densities". Working Paper.

Nicolato, E.: "Multivariate Modeling via Matrix Subordination". Working Paper.

Dorn, J. & Nicolato, E., : "Vega consistent pricing of CDS index tranches within a term structure framework". Preprint.

Hubalek, F. & Nicolato, E.: "On multivariate extensions of Lévy driven Ornstein–Uhlenbeck type stochastic volatility models and multi–asset options". Preprint.

Nicolato, E. & Prause, K.: "Derivative Pricing in Stochastic Volatility Models of the Ornstein–Uhlenbeck Type". Dept. of Mathematics Sciences, Aarhus University, 2000.

Iacus S.M. & Nicolato E.: "A Note on the existence of an equivalent martingale measure for a new class of stochastic volatility models". Dept. of Mathematics Sciences, Aarhus University, 1999.

October 2, 2023