ANDREA MAZZON

andrea.mazzon@univr.de
Department of Economics, University of Verona
Academic sector: *Mathematical methods of economics, finance and actuarial sciences (SECS-S/06)*

RESEARCH INTERESTS

Model uncertainty, asset price bubbles, local martingales, climate finance.

ACADEMIC OCCUPATIONS

Assistant Professorship (RTDB) 2023 - Ongoing
University of Verona
Department of Economics

Akademischer Rat auf Zeit (Lecturer / Academic Councillor) 2020 - 2023
Ludwig-Maximilians-Universität München
Department of Mathematics

Research Fellow (Postdoc) 2019 - 2020
Ludwig-Maximilians-Universität München
Department of Mathematics

Doctoral Research Fellow 2014 - 2018
Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy, in collaboration with Gran Sasso Science Institute (GSSI), l'Aquila, Italy
Title of the PhD thesis: *Asset price bubbles in Financial networks*
Thesis advisors: Prof. Dr. Francesca Biagini and Prof. Dr. Thilo Meyer-Brandis, LMU München

Scholarship 2014
University of Bologna, Department of Mathematics
Title of the project: *Asymptotic expansions of the forward implied volatility*
Advisor: Prof. Dr. Andrea Pascucci, University of Bologna

EDUCATION

Post Graduate Course in Quantitative Finance 2013 - 2014
University of Bologna
30/30 with honors

Laurea Magistrale (Master's degree, MSc), Mathematics 2009 - 2012
University of Bologna, Department of Mathematics
110/110 with honors
Master Thesis: *The Square Root Process*, supervised by Prof. Dr. Andrea Pascucci.

Laurea Triennale (Bachelor's Degree, BSc) in Mathematics 2005 - 2008
University of Bologna, Department of Mathematics
104/110
Bachelor Thesis: *Attacks to the RSA system*, supervised by Prof. Dr. Davide Aliffi.

OTHER ACTIVITIES

GrEnFIn Project
Project manager for the Ludwig-Maximilians-Universität München 2019-2022
Member of the Quality Board 2021-2022

The collaboration included seven academic partners and seven industry partners from Europe, with the goals of creating a Multiple Master Degree in Green Energy and Finance targeting young students and to promote research and studies on topics related to Sustainable Finance, Climate Risk and Energy Markets.

The GrEnFIn Multiple Master Degree will start in 2023 and will be given by the University of Bologna, LMU and the University of Paris Dauphine.

A GrEnFIn Project Final Conference has been held in Bologna in October 2022, with the aim to disseminate the most recent research contributions regarding these topics and to present the main outcomes of the project.

The project has been funded by Knowledge Alliance, Erasmus+ and supported by the European Union. For further informations please visit the GrEnFIn website

LMU Klimaforum group
Founding and organizing team member 2021-2023

The LMU Klimaforum is an association of scientists from various disciplines at LMU, founded at the beginning of 2021 to intensify climate-related interdisciplinary cooperation in research and teaching. In particular, it aims to initiate and favour research projects on the causes and consequences of climate change as well as its far-reaching implications, to generate subject-specific and interdisciplinary study programs, and to communicate climate-related research to the public.

Among the outputs of the project, two Munich Climate Schools have been organized in 2021 and 2022 and one is programmed for October 2023.

For more informations please visit the LMU Klimaforum website.

Website administrator for the Workgroup Financial Mathematics at LMU 2018-2023

Main duties: helping to organize the website in the most convenient and user friendly way, posting news and announcements, updating the lectures's webpages if needed.

WakeUpCall European Industrial Doctorates (EID) project
Collaborator for the University of Bologna 2014

The project has been funded in the Horizon2020 framework.
It is a Marie-Curie initiative in which six Early Stage Researchers (ESRs, like PhDs) work closely with industrial partners on a PhD Thesis in applied mathematics.
For further informations please visit the WakeUpCall website

Referee for peer reviewed journals:

Bernoulli Journal, Springer Mathematics Books

Involved in the organization of:

- First Munich Climate School
- LMU Spring Workshop in Stochastics and Finance
- LMU Versicherungsmathematisches Kolloquium

Contributor of the Finmath Java Library:

https://github.com/finmath

PUBLICATIONS

Published papers

- Biagini, F., Mazzon, A., Meyer-Brandis, T., Oberpriller, K., Liquidity based modeling of asset price bubbles via random matching. *To appear in SIAM Journal on Financial Mathematics*, 2023.
- Akhtari, B., Biagini, F., Mazzon, A., Oberpriller, K., Generalized Feynman-Kac Formula under volatility uncertainty, *Stochastic Processes and Their Applications*, 2023.
  DOI `10.1016/j.spa.2022.12.003`.
- Biagini, F., Mazzon, A., Perkkiö, A.-P., Optional projection under equivalent local martingale measures, *Finance & Stochastics*, 27(2), 435-465, 2023.
- Biagini, F., Mazzon, A., Oberpriller, K., Reduced-form framework for multiple default times under model uncertainty. *Stochastic Processes and Their Applications*, 156, 1-43, 2022.
- Biagini, F., Huber, T., Jaspersen, J. G., and Mazzon, A., Estimating Extreme Cancellation Rates in Life Insurance, *Journal of Risk and Insurance*, 88(4): 971-1000, 2021.
- Biagini, F., Mazzon, A., Meyer-Brandis, T., Financial asset bubbles in banking networks, *SIAM Journal on Financial Mathematics*, 10(2): 430-465, 2019.
- Biagini, F., Mazzon, A., Meyer-Brandis, T., Liquidity induced asset bubbles via flows of ELMMs, *SIAM Journal on Financial Mathematics*, 9(2), 800-834, 2018.
- Mazzon, A., Pascucci, A., The forward smile in local-stochastic volatility models, *Journal of Computational Finance*, 20(3): 1-29, 2015.

Preprints

- Biagini, F., Gonon, L., Mazzon, A., Meyer-Brandis, T., Detecting asset price bubbles using deep learning. *Preprint*, 2022.

TALKS

Invited talks

- ICIAM 2019, Valencia, Spain, June 2019: "Liquidity induced asset bubbles via flows of ELMMs"
- ICCF Wuppertal 2022, Wuppertal, Germany, June 2022: "Bubbles detection from option prices via machine learning techniques"
- Amases Conference 2022, Palermo, September 2022: "Generalized Feynman-Kac formula under volatility uncertainty"
- Seminar at the University California Santa Barbara, United States, November 2022: "Detecting asset price bubbles using deep learning"
- LPSM Seminar on Mathematical finance and numerical probability, Paris, France, January 2023: "Detecting asset price bubbles using deep learning"
- MathFinance Conference, Frankfurt, Germany, March 2023: "Detecting asset price bubbles using deep learning"
- Paris Bachelier Seminar, Paris, France, March 2023: "Reduced-form framework for multiple ordered default times under model uncertainty"

- Florence-Paris workshop on Statistics of Random Processes and Its Applications to Financial Econometrics, June 2023: "Detecting asset price bubbles using deep learning"
- Seminar at Dipartimento di Statistica e Metodi Quantitativi, Milano Bicocca, July 2023: "Detecting asset price bubbles using deep learning"
- Amases Conference 2023, Milano, September 2023: "Optional projection under equivalent local martingale measures"

Other talks

- XX Workshop on Quantitative Finance, Zürich, Switzerland, January 2019: "Liquidity induced asset bubbles via flows of ELMMs"
- 12th International Workshop on Stochastic Models and Control, Cottbus, Germany, March 2019: "Financial asset bubbles in banking networks"
- CEQURA Conference 2019, Munich, Germany, September 2019: "Financial asset bubbles in banking networks"
- AMaMeF Conference 2021, Online, June 2021: "Optional projection under equivalent local martingale measures"
- GrEnFIn Project Final Conference, Bologna, Italy, October 2022: "Optimal portfolio choice under climate risk and model uncertainty"
- XXIV Workshop on Quantitative Finance, Gaeta, Italy, April 2023: "Detecting asset price bubbles using deep learning"

TEACHING EXPERIENCE

- **Teaching assistant at LMU München for the courses:**
  - Numerical Methods for Financial Mathematics (2019, 2020, 2021, 2022, 2023)
  - Computational Finance and its Object Oriented Implementation (2018/19, 2019/20, 2020/21, 2021/22, 2022/23)
  - Mathematik im Querschnitt (2017)
- **Lecturer at LMU München of the courses:**
  - Introduction to Object-Oriented Programming in Java (2019, 2020, 2021, 2022, 2023)
  - Computational Finance and its implementation in Python with applications to option pricing (2021, 2022, 2023)
  - Risk measures and Portfolio optimization (2020)
  - Optimal stochastic control with applications in finance (2018)
- **Lecturer at the First GrEnFIn Summer School of the course:**
  - Climate risk and Model uncertainty
- **Lecturer at the Second GrEnFIn Summer School of the course:**
  - Climate risk management in finance: Risk measures under model uncertainty
- **Lecturer at the First GrEnFIn Full Immersion Experience of the course:**
  - Time series analysis with application to Green energy markets
- **Lecturer at the First GrEnFIn Summer Training of the course:**

  - Net Present Value, Internal Rate of Return, Cost-Benefit Analysis, Business Planning
- **Lecturer at the First Munich Climate School of the course:**
  - Risk Assessment and Climate Change
- **Lecturer at the Second Munich Climate School of the course:**
  - Interest Rates and Risk in the context of Climate Models
- **Lecturer at the Third Munich Climate School of the course:**
  - Risk Measures with applications to green finance
- **Lecturer for the entrepreneurship program "impACTup!" promoted by LMU for bachelor and master students:**
  This is a program which aims to teach students how to develop innovative, sustainable solutions to pressing issues facing the economy and civil society as well as the environmental and cultural sphere through entrepreneurial projects.
  My contribution is a 90 minutes long lecture, filmed by a professional cameramen, whose title is "*Financial valuation of a project*".

Starting from the Winter Semester 2019/20 and up to now, I could track the evaluations of students on my courses. I have received an overall average score about my preparation of 98.53 out of 100.

Moreover, I was responsible to organize the study plan at LMU for the GrEnFIn Pilot class during the Winter Semester 2021/2022.

CO-SUPERVISIONS

- Co-supervision of MSc thesis of Niya Stoyanova. Thesis title: *The Nature of ESG Risk Factors and their Incorporation in contemporary Market Risk Models*
- Co-supervision of MSc thesis of Andrea del Giudice. Thesis title: *Neural Networks for Option Pricing and Local Volatility Calibration*
- Co-supervision of MSc thesis of Riccardo Luiso. Thesis title: *Rolling the DICE: Java implementation of the DICE model with stochastic interest rates and negative emission technologies*
- Co-supervision of MSc thesis of Resul Deniz. Thesis title: *Liquidity induced asset bubbles in Financial networks*
- Co-supervision of MSc thesis of Clement Jerro. Thesis title: *Robustness in the optimization of Risk measures*
- Co-supervision of MSc thesis of William Wang. Thesis title: *Machine learning with Kernels for Portfolio valuation and Risk management*
- Co-supervision of MSc thesis of Alberto Zanon. Thesis title: *Dynamic refinement of the Time Homogeneous Term-Structure Modelling*
- Co-supervision of MSc thesis of Nono Line Henri. Thesis title: *Estimating Extreme Cancellation Rates in Life Insurance*
- Co-supervision of MSc thesis of Guglielmo del Sarto. Thesis title: *A review of interest rate modeling and discounting in the context of climate models*
- Co-supervision of MSc thesis of Michael Gerk. Thesis title: *Climate Risk Under Model Uncertainty*
- Co-supervision BSc thesis of Hoang Anh Nguyen. Thesis title: *Risk Measures and Capital Requirements for Processes*

- Co-supervision BSc thesis of Simon von Lippe. Thesis title: *On the Andersen-Broadie algorithm for pricing American options*
- Co-supervision of MSc thesis of Ralitsa Marinova. Thesis title: *Liquidity induced asset bubbles via flows of Equivalent Local Martingale Measures*
- Co-supervision of BSc thesis of Shanfeng Huang. Thesis title: *Robustness in the optimization of Risk measures*
- Co-supervision of BSc thesis of Michael Gerk. Thesis title: *Loss based risk measures*
- Co-supervision of BSc thesis of Kornel Wendt. Thesis title: *Liquidity risk theory and coherent measures of risk*
- Co-supervision of BSc thesis of Beatrix Schmitt. Thesis title: *Risk Preferences and their Robust Representation*

LANGUAGES

Italian: Mother tongue; *English*: Fluent; *German*: Good.

PROGRAMMING SKILLS

Extensive experience with Java, Python, Matlab and Mathematica programming, good knowledge of C++.