Maria Elena De Giuli Pavia, June 08, 2024

Contact Information

Department of Economics and Management - University of Pavia
Dipartimento di Scienze Economiche e Aziendali, Università di Pavia
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Current Position

Associate Professor in Mathemathical Methods for Economics and Finance (SSD SECS/S06) at the Department of Economics and Management, University of Pavia (from 01/11/2001 - present)

Board Faculty Member of the Master's program “Energy and Environmental Management and Economics (MEDEA), Department of Economics and Management, University of Pavia - ENI S.p.A (from 08/11/2019 - present)

Qualification

Italian National Scientific Qualification (ASN)

Full Professor for the disciplinary field 13/D4 (Mathemathical Methods for Economics, Finance and Actuarial Science - Metodi Matematici dell’Economia e delle Scienze Attuariali e Finanziarie (from 12/12/2023)

Past Positions

Associate Professor at the Faculty of Economics, Insubria University, Varese-Como (from 1/11/1998 to 31/10/2001)

Research fellow at the Faculty of Economics, University of Pavia

(from 1/08/1990 to 31/10/1998)

Administrative duties

From a.y. 2009/10 to a.y. 2012/13 Member of the Quality Assurance Group - Master's Degree (LM 56) in "Economics, Finance and International Integration", Department of Department of Economics and Management, University of Pavia (from 01/11/2009 to 31/10/2013

In a.y. 2013/14, Coordinator (Referente) of the Master's Degree (LM 56) in "Economics, Finance and International Integration", Department of Economics and Management, University of Pavia (from 01/11/2013 to 31/10/2014)

In the following academic years: 2009/10, 2010/11, 2011/12; 2012/13; 2013/14; 2014/15; 2015/16; 2016/17; 2017/18; 2018/2019; 2019/20, I was a Member of the Research Committee of the Department of Economics and Management, University of Pavia 01/11/2009 31/10/2020

In the following academic years: 2016/17; 2017/18; 2018/2019; 2019/20, 2020/21, 2021/22, 2022/23; 2023/24, I have been the Coordinator of the Tutoring Committee of the Department of Department of Economics and Management, University of Pavia

Faculty Board Member of PhD programs

Member of the Faculty Board of the Ph.D program in "Mathematics for the Analysis of Financial Markets" for the cycles XVI (a.y 2000) and XVII (a.y. 2001). University of Brescia (01/01/2000 -31/10/2002)

Member of the Faculty Board of the Ph.D program in "Mathematics for the Analysis of Financial Markets" [DOT03C6548] for the cycles XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII, XXVIII. From the a.y. 2002 (XVIII cycle) to the a.y. 2012 (XXVIII cycle). University of Milano-Bicocca (01/01/2002 - 05/11/2012)

Member of the Faculty Board of the Ph.D in "Economics and Management of Technology – DREAMT" [DOT1322095] for the cycles XXIX, XXX, XXXI, XXXII. University of Pavia (06/09/2013 - 02/05/2017)

Member of the Faculty Board of the Ph.D in "Models and Methods for Economics and Management (Analytics for Economics and Management – AEM)" [DOT1746752] for the cycles XXXIII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, XXXX. University of Brescia (a.y. 2017- present)

Visiting period

Visiting research fellow - Università della Svizzera Italiana (USI), Faculty of Economics from 06/03/2023 to 12/03/2023; from 20/04/2023 to 30/04/2023; from 14/07/2023 to 18/07/2023

Visiting research fellow - University of Plymouth (UK), Faculty of Science and Engineering, School of Engineering, Computing and Mathematics; from 5/12/2014 to 12/12/2014; from 19/01/2015 to 31/01/2015

Visiting research fellow - University of Macedonia, Department of Business Administration, Thessaloniki, Greece, from 29/6/2012 to 9/7/2012

Studies and scientific researches funded by public or private institutions

Member of the Research Program of Relevant National Interest (PRIN) 2022 “A geo-localized data framework for managing climate risks and designing policies to support sustainable investments” ”, SH7 Sector; protocol number 20229CWYXC_001; Scientific Coordinator/PI Alessandro Spelta – University of Pavia – 1); duration 24 months

Member of the Research Program of Relevant National Interest (PRIN) 2020 "Fin4Green - Finance for a Sustainable, Green and Resilient Society: Quantitative approaches for a robust assessment and management of risks related to sustainable investing," ERC Sector SH1; University of Pavia - 3); protocol number 2020B2AKFW_003; Scientific Coordinator/PI Billio Monica (Ca' Foscari University of Venice - 1); duration 36 months (03/06/2022 – 02/06/2025)

Member of the Research Program of Relevant National Interest (PRIN) 2010-2011 "Multivariate Statistical Models for Risk Assessment"; AREA 13; University of Pavia -1; protocol number 2010RHAHPL_001; Scientific Coordinator/PI Giudici Paolo Stefano (University of Pavia - 1); duration 36 months (01/02/2013 - 01/02/2016)

Member of the Research Program of Relevant National Interest (PRIN) 1999 "Collective learning and local innovative systems: technology transfer and internalization of skills in small business systems," AREA 13; University of Insubria Varese-Como (4); protocol number 9913163117_004; Scientific Coordinator/PI Prof. Camagni Roberto (Politecnico Milano - 1); duration 24 months (26/11/1999 - 20/12/2001)

PI of the project “Financial Oversight and Risk-Tailored Understanding for New Evaluation: FORTUNE” (Progetto dipartimento di eccellenza); since 2024

Member of the international collaboration network European Cooperation in Science and Technology (COST), CA19130 - Fintech and Artificial Intelligence in Finance - Towards a transparent financial industry, funded by the European Commission, for Working Group 2: Transparent versus Black Box Decision-Support Models in the Financial Industry (Leader: Petre Lamesk, Faculty of Computer Science and Engineering, North Macedonia), since 2022

Responsible for the scientific research “The impact of climate change on Spanish wind/solar futures” entrusted by Barcelona Supercomputing Center (BSC - Centro Nacional de Supercomputación), Barcelona (Spain), from 01/07/2020 to 01/07/2021, as part of the Horizon 2020 project – S2S4E “Sub-seasonal to Seasonal climate forecasting for Energy”. The research activity is focused on forecasting models to optimize investment decisions of operators in energy future contracts, applying sub-seasonal forecasts.

Member of the research group related to the project "Extreme Value Theory to Enel group portfolios to estimate commodity risk assessment", as an expert in "copula models and risk management", coordinated by. C. Tarantola as an "expert in graphical models and Bayesian networks"; research contract (8400057081) between Enel S.p.A. – Risk Management, Commodity Risk Models and Systems and the University of Pavia (Department of Economic and Business Sciences), from 28/11/2013 to 31/03/2017. The research activity is focused on the following topics: identification and implementation of an effective tool for measuring and assessing risks related to extreme events; simulation and stress analysis on portfolios to evaluate the impacts on margins resulting from extreme market conditions and events

Member of the research project "Eureka! - An idea for energy", research contract (CO.IN: CPOPR000) between Enel S.p.A. – Corporate HR Function and the University of Pavia (Department of Political Economy and Quantitative Methods), Scientific Coordinator A. Cavaliere (University of Pavia), from 13/10/2008 to 30/06/2009. The research activity is focused on the following topic: Gas storage optimization – Option values in alternative regulatory market frameworks

Memberships

CAM-Risk (Centre for the Analysis and Measurement of global RISKs); since 2023

EFI (Energy Finance Italia); since 2023

EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY (COST (since 2022)

EMS (European Mathematical Society); since 2020

A.M.A.S.E.S (Association for Mathematics Applied to Economic and Social Sciences); since 1992

Education

Laurea in Economia e Commercio, Università di Pavia (a.a. 1983/1984)

Research Interests

I have an interest in applying mathematical theories to solve economic and financial problems. My main research interests are related to models and methods in Economics and Finance with applications to energy markets and business problems. This includes using mathematical models to analyze market behavior, optimize economic processes, and enhance decision-making in business strategy.

I have participated as a speaker and organized conferences both nationally and internationally. Served as a peer reviewer for international journals.

Selected Publications

De Giuli, Maria Elena, Grechi, Daniele, Tanda, Alessandra (2024). What do we know about ESG and risk? A systematic and bibliometric review. CORPORATE SOCIAL RESPONSIBILITY & ENVIRONMENTAL MANAGEMENT, p. 1096-1108, ISSN: 1535-3958, doi: 10.1002/csr.2624

A. Spelta, M. E. De Giuli (2023). Does renewable energy affect fossil fuel price? A time–frequency analysis for the Europe. PHYSICA. A, ISSN: 1873-2119

De Giuli, ME, Spelta, A (2023). Wasserstein barycenter regression for estimating the joint dynamics of renewable and fossil fuel energy indices. COMPUTATIONAL MANAGEMENT SCIENCE, vol. 20, ISSN: 1619-697X, doi: 10.1007/s10287-023-00436-4

Allevi, E, De Giuli, ME, Dominguez, R, Oggioni, G (2023). Evaluating the role of waste-to-energy and cogeneration units in district heatings and electricity markets. COMPUTATIONAL MANAGEMENT SCIENCE, vol. 20, ISSN: 1619-697X, doi: 10.1007/s10287-023-00437-3

Allevi E., De Giuli M. E., Milasi M., Scopelliti D. (2022). Quasi-variational problems with non-self map on Banach spaces: Existence and applications. NONLINEAR ANALYSIS: REAL WORLD APPLICATIONS, vol. 67, ISSN: 1468-1218, doi: 10.1016/j.nonrwa.2022.103641

De Giuli M. E., Flori A., Lazzari D., Spelta A. (2022). Brexit news propagation in financial systems: multidimensional visibility networks for market volatility dynamics. QUANTITATIVE FINANCE, p. 1-23, ISSN: 1469-7688, doi: 10.1080/14697688.2021.1970212

Allevi E, Boffino L, De Giuli M.E., Oggioni G. (2019). Analysis of long-term natural gas contracts with vine copulas in optimization portfolio problems. ANNALS OF OPERATIONS RESEARCH, vol. 274, p. 1-37, ISSN: 0254-5330, doi: 10.1007/s10479-018-2932-x

G. Farina, R. Giacometti, M. E. De Giuli (2019). Sistemic risk attribution in the EU. JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY, vol. 70, p. 1115-1128, ISSN: 0160-5682, doi: 10.1080/01605682.2018.1487823

Federico BassettI, Maria Elena De Giuli, Nicolino Enrica, Claudia Tarantola (2018). Multivariate Dependence Analysis via Tree Copula Models: an Application to One-year Forward Energy Contracts. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 269, p. 1107-1121, ISSN: 0377-2217, doi: 10.1016/j.ejor.2018.02.037

Elisabetta Allevi, Luigi Boffino, Maria Elena De Giuli, Giorgia Oggioni (2018). Evaluating the impacts of the external supply risk in a natural gas supply chain: the case of the Italian market. JOURNAL OF GLOBAL OPTIMIZATION, vol. 70, p. 347-384, ISSN: 0925-5001, doi: 10.1007/s10898- 017-0584-z

Dalla Valle Luciana, De Giuli Maria Elena, Tarantola Claudia, Manelli, Claudio (2016). Default Probability Estimation via Pair Copula Constructions. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 249, p. 298-311, ISSN: 0377-2217, doi: 10.1016/j.ejor.2015.08.026

Bormetti Giacomo, De Giuli Maria Elena, Delpini Danilo, Tarantola Claudia (2012). Bayesian Value-at-Risk with Product Partition Models. QUANTITATIVE FINANCE, vol. 12, p. 769-780, ISSN: 1469-7688, doi: 10.1080/14697680903512786

De Giuli Maria Elena, Maggi Mario Alessandro, Tarantola Claudia (2010). Bayesian outlier detection in Capital Asset Pricing Model. STATISTICAL MODELLING, vol. 10, p. 375-390, ISSN: 1471- 082X, doi: 10.1177/1471082X0901000402

De Giuli Maria Elena, Maggi Mario Alessandro, Paris Francesco Maria (2009). Deposit guarantee evaluation and incentive analysis in a mutual guarantee system. JOURNAL OF BANKING & FINANCE, vol. 33, p. 1058-1068, ISSN: 0378-4266, doi: 10.1016/j.jbankfin.2008.11.013

De Giuli Maria Elena, Fantazzini Dean, Maggi Mario Alessandro (2008). A New Approach for Firm Value and Default Probability Estimation Beyond Merton Models. COMPUTATIONAL ECONOMICS, vol. 31, p. 161-180, ISSN: 0927-7099, doi: 10.1007/s10614-007-9112-4

Teaching activity

I have taught and currently teach courses at the Bachelor’s, Master’s, and PhD levels.

- Bachelor's level: Matematica Finanziaria

- Master's level: Matematica per le decisioni della Finanza Aziendale, Modelli Matematici per la Finanza Quantitativa; Finanza Quantitativa, Mathematical Methods for Business and Economics; Quantitative Finance, Portfolio Management Asset Allocation e Controllo del Rischio.

- PhD level: Stochastic Processes and Calculus for Economics and Finance, Quantitative Methods in Asset Management, Mathematics for Economics and Finance – Financial Mathematics