

E M A N U E L A R O S A Z Z A G I A N I N

PERSONAL DATA

- Date and place of birth: June 8, 1973 – Biella - Italy
- Nazionalità: Italian

POSITION AND RESEARCH ACTIVITIES

December 2004 – October 31, 2008: **Assistant Professor** in Mathematics for Economics and Finance at “Università di Napoli Federico II” - Italy

November 1st, 2008 – February 29, 2012: **Assistant Professor** in Mathematics for Economics and Finance at University of Milano-Bicocca, Italy

March 1st, 2012 – 31 Ottobre 2016: **Associate Professor** in Mathematics for Economics and Finance at Università di Milano-Bicocca, Italy

November 1st, 2016 – Today: **Professor** in Mathematics for Economics and Finance at Università di Milano-Bicocca, Italy

Coordinator of the PhD program in Statistics and Mathematical Finance (33th cycle) at Università di Milano-Bicocca, Italy

GEV member of area 13 for the VQR (Evaluation of the Research Quality) 2011-2014

Associate Editor of *Insurance: Mathematics and Economics* (from 2018)

Referee for Annals of Applied Probability, Annals of Operations Research, Decision in Economics and Finance, Dependence Modeling, European Journal of Operational Research, Finance and Stochastics, IMA Journal of Management Mathematics, Insurance: Mathematics and Economics, Journal of Banking and Finance, Journal of Risk, Mathematical Finance, Mathematics and Financial Economics, Positivity, Review of Finance, Science in China: Mathematics, SIAM Journal on Control and Optimization, Statistics and Risk Modeling, Stochastic Processes and their Applications, Stochastics, ...

EDUCATION

1987 – 1992 Liceo Scientifico A. Avogadro – Biella – Italy - Scientific certificate

1992 – 14/12/1998 Università degli Studi di Milano - Italy
Laurea in Matematica (equivalent to a degree)

1999 – 9/12/2002 Università degli Studi di Bergamo - Italy
PhD in “Metodi computazionali per le decisioni e previsioni economiche e finanziarie”

2000 – 2001 Université Pierre et Marie Curie (Paris VI) – France
Diplôme d’ Etudes Approfondis (DEA) in “Probabilités et Applications - Filière Probabilités et Finances”, with final **internship** (from April to July 2001) at “Crédit Commercial de France” - “Direction de la Recherche et de l’Innovation” (DRI) – Paris - France

VISITING PERIODS

May 13 – June 5, 2015: **Associate member (short-term fellow)** of the Research Group "Robust Finance: Strategic Power, Knightian Uncertainty, and the Foundations of Economic Policy Advice" at ZIF center (Bielefeld University, Germany)

May 31, – June 4, 2004; January 26– February 4, 2005, January 8-12, 2007, March 5-9, 2007, May 30- June 1st, September 11-15, 2007: **Visiting** at ETH Zurich – Switzerland

April 22 – June 2nd, 2006: Visiting at Shandong University, Jinan, China (during this period visiting of 1 week at Fudan University, Shanghai, China)

September 29 – October 3, 2006: Visiting at University of Oslo, Norway

January 2-31, 2012: Visiting at INRIA-Rocquencourt, Paris, France

December 10-12, 2014: Visiting at University of Amsterdam, Netherlands

February 25-March 14, 2018; may 6-16, 2019: Visiting at University of Oslo, Norway

FUNDED RESEARCH PROJECTS AND PRIZES (FROM 2010)

Research prize (joint with L. Eeckhoudt and A.M. Fiori), Dauphine-Amundi Chair in Asset Management, 2013-14 edition. Project: Downside loss-averse behaviours and risk measurement (VaR, CVaR and lower partial risk measures)

Coordinator of the **research project** “Loss aversion, prudence and the demand for insurance” (2015, other participants: L. Eeckhoudt e A.M. Fiori) – Chair *Individuals and Risk: analysis and market response* (Les particuliers face au risque: analyse et réponse des marchés) funded by Fondation du Risque, Université Paris-Dauphine, ENSAE and Groupama.

Participant at **progetto Gnampa** 2016 “Levy Processes, Optimal Control and portfolio allocation : theoretical analysis and empirical applications” (other participants: Asmerilda Hitaj; Elisa Mastrogiacono (coordinator))

Partecipant at **progetto Gnampa** 2018 “Infinitely divisible distributions for portfolio allocation” (other participants: Edit Rroji (coordinator); Asmerilda Hitaj, Claudio Macci)

FOREIGN LANGUAGES

French (fluent), English

Master and advanced courses

Master di Finanza e Assicurazioni - Università degli Studi di Firenze, Italy
Course on “Misure di Rischio”: 2002/03, 2003/04

Master in Economia e Diritto dei Mercati Finanziari – Università La Sapienza di Roma, Italy
Course on “Misurazione e Gestione dei Rischi Finanziari”: 2002/03

Master Avellino – Lectures for the course “Propedeutico”: 2004/05

Corso di Alta Formazione (later, Master) in “Finanza Avanzata” - Istituto I.P.E. – Napoli, Italy
Lectures for the course on “Metodi Quantitativi per la Finanza”: 2004/05
Course on “Metodi Quantitativi per la Finanza”: 2005/06, 2006/07, 2007/08

Laurea Specialistica / Magistrale Courses

Università di Milano-Bicocca, Italy
Course on Gestione portafogli di derivati: 2007/08, 2008/09
Course on Risk Theory: 2009/10, 2010/11, 2011/12
Corso di Risk measures: 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18, 2018/19, 2019/20

Università di Milano, Italy
Course on Finanza Matematica 2: 2013/14

Laurea triennale Courses

Università di Napoli “Federico II”, Italy
Course on Metodi matematici: 2005/06, 2006/07, 2007/08
Course on Matematica Finanziaria I: 2006/07, 2007/08

Università di Milano-Bicocca, Italy
Course on Matematica generale I: 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14, 2014/15
Course on Matematica generale II: 2012/13, 2013/14, 2015/2016, 2016/17, 2018/19, 2019/20
Course on Fondamenti di Finanza Quantitativa: 2010/11
Course on Matematica per la Finanza: 2014/15, 2015/16, 2016/17, 2017/18, 2018/19, 2019/20

Tutoring

Politecnico di Milano, Italy
Laboratory tutoring for the course on Statistica: 2001/02, 02/03
Tutoring for the course on Statistica: 2002/03, 03/04, 04/05
Tutoring for the course on Calcolo delle Probabilità (per la Laurea on Line): 2002/03, 03/04, 04/05
Tutoring for the course on Calcolo delle Probabilità: 2003/04
Tutoring for the course on “Metodi Matematici per la Finanza”: 2003/04, 04/05

Università del Piemonte Orientale – Novara, Italy
Tutoring for the course on Matematica: 1999/2000

Università Bocconi di Milano, Italy
Tutor for the course on “Modelli quantitativi per la Finanza”: 2004/05

Università di Milano-Bicocca, Italy
Tutoring for the course on “Metodi stocastici per la Finanza” – Laurea Magistrale in Matematica: 2010/11

- June 3, 2004- ETH Zurich- Switzerland: “Some examples of risk measures via g-expectations”
- December 14, 2004- Università di Milano Bicocca, Italy: “Misure di rischio invarianti in distribuzione”
- March 16, 2005 – Politecnico di Torino, Italy: “Misure di rischio (statiche e dinamiche) e g-expectations”
- June 2005 - Summer School on Risk Measurement and Control– Roma, Italy: “From static to dynamic risk measures”
- May 2006 – Shandong University, Jinan, China: cycle of talks “Risk measures and g-expectations”
- May 22 – 23, 2006 – Fudan University, Shanghai, China: “One-to-one correspondence between g-expectations and risk measures”; “Orlicz risk measures”
- September 29, 2006 – Mathematics-Economics Day – University of Oslo, Norway: “Risk measures and finance I: One-to-one correspondence between risk measures and g-expectations”; “Risk measures and finance II: Orlicz risk measures”
- September 29, 2007 – International Workshop on Models of Credit and Operational Risks in the Financial Sector – Bolzano, Italy: “Orlicz risk measures”
- November 2007 – International Conference on Stochastic Analysis and Applications, Hammamet, Tunisia: “Penalty functionals of risk measures”
- November 29, 2007 – Università del Piemonte Orientale, Novara, Italy: “Rappresentazione della funzione di penalità di una misura di rischio dinamica convessa”
- 27 maggio 2009 – Brown Bag Seminar – Vienna Institute of Finance, Austria: “Representation of the penalty term of dynamic time-consistent convex risk measures”
- 15 gennaio 2010 – Workshop on Foundations of Mathematical Finance – Fields Institute, Toronto, Canada: “g-expectations and the representation of the penalty term of dynamic convex risk measures”
- 5 febbraio 2010 –Università di Pisa, Italy: “g-expectations and the representation of the penalty term of dynamic convex risk measures”
- 19 febbraio 2010 –Università di Napoli “Federico II”, Italy: “Sulla continuità delle misure di rischio comonotone convesse”
- September 30, 2010 - Workshop on Advanced Mathematical Methods for Finance, Berlin, Germany: “Non-convex risk measures”
- January 20, 2012- Université de Marne la Vallée, France: “Quasi-concave acceptability indexes and liquidity risk”
- September 24-26, 2013 - Innovation in Stochastic Analysis and Mathematical Finance Workshop – Bergen, Norway: “Dual representation of minimal supersolutions of convex BSDEs”
- December 12, 2014, University of Amsterdam, Netherlands: “Pareto optimal allocations and optimal risk sharing for quasiconvex risk measures”
- January 21, 2015, de Finetti Workshop, Università di Milano, Italy: “Dual Representation of Minimal Supersolutions of Convex BSDEs”
- April 20-24, 2015, Conference on Stochastics of Environmental and Financial Economics, CAS center, Oslo: “Orlicz and Haezendonck-Govaerts risk measures: axiomatization and robustification”
- June 3, 2015, ZIF center, Bielefeld, Germany: “Pareto optimal allocations and optimal risk sharing for quasiconvex risk measures”
- October 29-31, 2015, Conference on Risk measures: Frontiers of Mathematics and Regulation –Bologna: Risk measures and time-consistency
- January 2018 – Workshop on Equilibrium Analysis- Napoli, Italy: “Capital allocation à la Aumann-Shapley for non-differential risk measures”
- March 6, 2018- PhD gathering, Oslo, Norway: Time-consistency of risk measures: how strong is such a property?
- May 15, 2018 – University of Vigo, Spain: Risk measures and capital allocations
- May 9, 2019 – Oslo, Norway: Dynamic robust Orlicz premia and Haezendonck-Govaerts risk measures

- September 2000 - Convegno AMASES, Italy: “Misure di rischio sublineari”
- July 6, 2001- CCF– Paris, France: presentation of the internship report “About different measures of risk”
- September 2002 - Convegno AMASES, Italy: “Misure di rischio convesse”; “Misure di rischio e g-expectations”
- February 2003 - Convegno AMAM – Nice, France: “Preferences and Risk Measures
- July 1st, 2003 - Conference Blaise Pascal – Paris, France: “Some examples of risk measures via g-expectations”
- September 2003 - Convegno AMASES, Italy: “Misure di rischio invarianti in legge”
- April 28, 2004 - Conference “Mathematical Finance and Actuarial Seminars”–Florence, Italy: “Some characterizations of Risk Measures”
- June 2004 - Conference “Risk Measurement and Control ”–Roma, Italy: “Some examples of risk measures via g-expectations”
- July 2005 - SAET Conference – Spain: “Some examples of risk measures via g-expectations”
- September 2006 - Convegno AMASES, Italy: “Orlicz risk measures”
- September 2006 - Convegno PRIN “Metodi stocastici in Finanza Matematica”- Lecce, Italy: “Static Orlicz Risk Measures”
- July 2008 – Convegno PRIN “Metodi Stocastici in Finanza” – Torino, Italy: “Representation of the penalty term of dynamic concave utilities”
- September 2008 – Convegno AMASES – Trento, Italy: “Rappresentazione della funzione di penalità di una misura di rischio dinamica convessa”
- January 29, 2009 – X Workshop on Quantitative Finance – Politecnico di Milano, Italy: “Representation of the penalty term of dynamic concave utilities”
- September 2010 – Convegno AMASES – Macerata, Italy: “On the Continuity of Comonotone Convex and of Quasiconvex Risk Measures”
- June 2011 – International Congress on Insurance: Mathematics and Economics, Trieste, Italy: “Haezendonck risk measures and Orlicz quantiles”
- September 2011 – Convegno UMI, Bologna, Italy: “Haezendonck risk measures and Orlicz quantiles”
- September 2011 – Convegno AMASES, Pisa, Italy: “Haezendonck risk measures and Orlicz quantiles”
- June 28-30, 2012 - International Congress on Insurance: Mathematics and Economics, Hong Kong: “Quasi-concave acceptability indexes and liquidity risk”
- September 2012 – Convegno PRIN “Probability and Finance” – Pescara, Italy: “Generalized quantiles as risk measures”
- June 10-15, 2013 – AMAMEF Workshop, Warsaw, Poland: “Portfolio optimization with quasiconvex risk measures”
- June 2014, Bachelier World Congress, Bruxelles, Belgio: “Pareto optimal allocations and optimal risk sharing for quasiconvex risk measures”
- May 18-22, 2015, ZIF Research Group Workshop - Mathematics and Financial Economics, Bielefeld, Germany: “Orlicz and Haezendonck-Goovaerts risk measures: axiomatization and robustification”
- September 1-4, 2015 - International Conference on Operations Research – Vienna, Austria: “Orlicz and Haezendonck-Goovaerts risk measures: axiomatization and robustification”
- March 3, 2016 - University of Oslo, Norway: “Time-consistency for cash-subadditive risk measures”
- 30 maggio – 3 giugno 2016 - ZIF Research Group Closing Conference - Robust Finance and Beyond, Bielefeld, Germania : “Time-consistency for cash-subadditive risk measures”

September 12–14, 2016 - Vienna Congress on Mathematical Finance – Vienna, Austria: “The Term Structure of Sharpe Ratios: A New Methodology for Arbitrage-Free Asset Pricing in Continuous Time”

September 2016 - Convegno AMASES – Catania, Italy: “The Term Structure of Sharpe Ratios: A New Methodology for Arbitrage-Free Asset Pricing in Continuous Time”

June 2017 – AMAMEF Conference – Amsterdam (invited session): “The Term Structure of Sharpe Ratios: A New Methodology for Arbitrage-Free Asset Pricing in Continuous Time”

July 2017 – IME Conference – Vienna, Austria: Time-consistency of risk measures: how strong is such a property?

September 2017 – AMASES – Cagliari, Italy: Time-consistency of risk measures: how strong is such a property?

May 30- June 3, 2018 - Conference in Actuarial Science & Finance on Samos, Greece: Dynamic Robust Return Risk Measures: Time-Consistency and g-Expectations

June 16-20, 2018- Bachelier Conference – Dublin, Ireland: Capital allocation for classical and set-valued risk measures

September 2018 – AMASES – Napoli, Italy: Dynamic Robust Return Risk Measures: Time-Consistency and g-Expectations

UMI-SIMAI-PTM Joint meeting – Wroclaw, Poland - September 2018: Capital allocation for classical and set-valued risk measures

June 2019: AMAMEF Conference – Paris, France: Dynamic robust Orlicz premia and Haezendonck-Goovaerts risk measures

July 10-12, 2019 - IME Conference – Munich, Germany: Risk measures and progressive enlargement of filtrations: a BSDE approach

September 16-20, 2019 - DEA Conference – Krakov, Poland: Risk measures and progressive enlargement of filtrations: a BSDE approach

- Frittelli, M., Rosazza Gianin, E. (2002): "Putting Order in Risk Measures", *Journal of Banking & Finance*, Vol. 26, n. 7, 1473-1486.
- Frittelli, M., Rosazza Gianin, E. (2004): "Dynamic Convex Risk Measures", in: *Risk Measures for the 21st Century*, G. Szegö ed., J. Wiley, 227-248.
- Frittelli, M., Rosazza Gianin, E. (2005): "Law Invariant Convex Risk Measures", in: *Advances in Mathematical Economics*, Vol. 7, S. Kusuoka e T. Maruyama eds., 33-46.
- Rosazza Gianin, E. (2006): "Risk measures via g-expectations", *Insurance: Mathematics and Economics* 39, 19-34.
- Bellini, F., Rosazza Gianin, E. (2008): "On Haezendonck risk measures", *Journal of Banking and Finance* 32/6, 986-994.
- Bellini, F., Rosazza Gianin, E. (2008): "Optimal Portfolios with Haezendonck Risk Measures", *Statistics and Decisions* 26, 89-108.
- Delbaen, F., Peng, S., Rosazza Gianin, E. (2010): "Representation of the penalty term of dynamic concave utilities", *Finance and Stochastics* 14/3, 449-472.
- Frittelli, M., Rosazza Gianin, E. (2011): "On the penalty function and on continuity properties of risk measures", *International Journal of Theoretical and Applied Finance* 14/1, 163-185.
- Fiori, A., Rosazza Gianin, E., Spasova, A. (2012): "Risk measures and Pareto tails", in: *Mathematical and Statistical Methods for Actuarial Sciences and Finance*, Perna e Sibillo eds., Springer, 183-191.
- Bellini, F., Rosazza Gianin, E. (2012): "Haezendonck-Goovaerts risk measures and Orlicz quantiles", *Insurance: Mathematics and Economics* 51/1, 107-114.
- Rosazza Gianin, E., Sgarra, C. (2013): "Acceptability indexes via g-expectations: an application to liquidity risk", *Mathematics and Financial Economics* 7, 457-475.
- Bellini, F., Klar, B., Müller, A., Rosazza Gianin, E. (2014): "Generalized quantiles as risk measures", *Insurance: Mathematics and Economics* 54, 41-48.
- Mastrogiovanni, E., Rosazza Gianin, E. (2015): "Pareto optimal allocations and optimal risk sharing for quasiconvex risk measures", *Mathematics and Financial Economics* 19/2, 149-167.
- Mastrogiovanni, E., Rosazza Gianin, E. (2015): "Portfolio optimization with Quasiconvex Risk Measures", *Mathematics of Operations Research* 40/4, 1042-1059.
- Eeckhoudt, L., Fiori, A.M., Rosazza Gianin, E. (2016): "Loss-averse preferences and portfolio choices: an extension", *European Journal of Operations Research* 249, 224-230.
- Drapeau, S., Kupper, M., Rosazza Gianin, E., Tangpi, L. (2016): "Dual Representation of Minimal Supersolutions of Convex BSDEs", *Annales de l'Institut Henri Poincaré - Probabilités et Statistiques* 52/2, 868-887.
- Bellini, F., Laeven, R., Rosazza Gianin, E. (2018): Robust Return Risk Measures. *Mathematics and Financial Economics*, 12(1), 5-32.
- Centrone, F., Rosazza Gianin, E. (2018): Capital allocation à la Aumann–Shapley for non-differentiable risk measures. *European Journal of Operational Research*, 267(2), 667-675.
- Eeckhoudt, L., Fiori, A. M., Rosazza Gianin, E. (2018): Risk Aversion, Loss Aversion, and the Demand for Insurance. *Risks*, 6(2), 60.

Mastrogiamomo, E., Rosazza Gianin, E. (2019): Time-consistency of risk measures: how strong is such a property? *Decisions in Economics and Finance* 42(1), 287-317.

Canna, G., Centrone, F., Rosazza Gianin, E. (2019). Capital allocations for risk measures: a numerical and comparative study. *RISK MANAGEMENT MAGAZINE*

Bellini, F., Laeven, R., Rosazza Gianin, E. (2020): Dynamic robust Orlicz premia and Haezendonck-Govaerts risk measures. Forthcoming on *European Journal of Operational Research*.

Centrone, F., Rosazza Gianin, E. (2020): Capital allocations for set-valued risk measures. *Journal of Theoretical and Applied Finance*, 23/01, 2050009.

BOOKS

Rosazza Gianin, E., Sgarra, C. (2007): “Esercizi di Finanza Matematica”, Springer Italia.

Rosazza Gianin, E., Sgarra, C. (2013): “Mathematical Finance: Theory Review and Exercises. From Binomial Model to Risk Measures”, Springer.

WORKING PAPERS and PREPRINTS (not – yet – published)

Rosazza Gianin, E. (2001): “About different measures of risk”, Direction de la Recherche et de l’Innovation, CCF, Francia, Rapporto di stage

Frittelli, M., Rosazza Gianin, E. (2002): “Equivalent Formulations of Reasonable Asymptotic Elasticity”, Working paper, Dipartimento di Matematica per le Decisioni, Università di Firenze

Rosazza Gianin, E. (2002): “Some examples of risk measures via g-expectations”, Rapporto di ricerca n. 41, Dip. di Metodi Quantitativi, Univ. di Milano Bicocca

Rosazza Gianin, E. (2002): “Convexity and Law Invariance of Risk Measures”, Tesi di Dottorato, Università di Bergamo

Eeckhoudt, L., Pagani, E., Rosazza Gianin, E. (2016): “Prudence, risk measures and the Optimized Certainty Equivalent: a note”. Working paper.

Beissner, P., Rosazza Gianin E. (2016): “The Term Structure of Sharpe Ratios: A New Methodology for Arbitrage-Free Asset Pricing in Continuous Time”. Preprint.

CONFERENCE PROCEEDINGS

Frittelli, M., Rosazza Gianin, E. (2000): “Misure di rischio sublineari”, Atti del XXIV Convegno AMASES

Frittelli, M., Rosazza Gianin, E. (2002): “Misure di rischio convesse”, Atti del XXVI Convegno AMASES, 233-234

Rosazza Gianin, E. (2002): “Misure di rischio e g-expectations”, Atti del XXVI Convegno AMASES, 413-416

Frittelli, M., Rosazza Gianin, E. (2003): “Misure di rischio invarianti in legge”, Atti del XXVII Convegno AMASES