

# Valeria Bignozzi

## Curriculum Vitae

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### Current Position

- 06.2023- **National Scientific Habilitation (ASN) for the position of Full Professor**, 13/D4-Mathematical methods of economics, finance and actuarial sciences.  
06.2034  
03.2020- **Associate Professor of Mathematical methods of economics, finance and actuarial sciences**, Department of Statistics and Quantitative Methods, Milan-Bicocca.  
present  
04.2017- **National Scientific Habilitation (ASN) for the position of Associate Professor**, 13/D4-Mathematical methods of economics, finance and actuarial sciences.  
04.2028  
10.2016- **Senior researcher (rtd b)**, Dept. Statistics and Quantitative Methods, University of Milano-Bicocca, Italy.  
02.2020

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### Previous Positions

- 08.2016 **Winner of a junior research position (rtd a)**, Scuola Normale Superiore of Pisa, Italy, Position not fulfilled.  
07.2015- **Postdoc position (12 months)**, Dept. of Methods and Models for Economics, Territory and Finance (MEMOTEF), Sapienza University of Rome, Italy. Supervisor: Prof. L. Petrella. Research project: Empirical and Bayesian elicitable risk measures.  
06.2016  
05.2014- **Postdoc position (12 months)**, School of Economics and Management, University of Florence, Italy. Supervisors: Prof. M. E. Mancino, Dr. G. Puccetti. Research project: Risk measures bounds under dependence uncertainty.  
04.2015  
01.2013- **Postdoc position (16 months)**, Dept. of Mathematics, ETH Zurich, Switzerland. Supervisor: Prof. P. Embrechts. Research project: Elicitable risk measures; Risk measure under dependence uncertainty.  
04.2014  
01.2012- **Research Assistant (8 months)**, Faculty of Actuarial Science and Insurance, Cass Business School, City University London, UK. Supervisor: Dr. A. Tsanakas. Research project: The impact of model error on capital adequacy.  
08.2012

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### Education

- 2008-2012 **PhD**, Faculty of Actuarial Science and Insurance, Cass Business School, City University London, UK. Thesis: Contributions to solvency risk measurement. Supervisors: Dr. A. Tsanakas, Dr. L. Ballotta, **Declared equivalent ("equipollente") to the Italian title "Dottore di Ricerca" by the Italian Education, University and Research Ministry (MIUR).**

- 2005-2008 **Master Degree in Applied Mathematics**, Dept. of Mathematics, Sapienza University of Rome, Italy. Thesis: *Stochastic Integration for mixed Brownian-Poisson Processes with Application to Incomplete Markets*. Supervisors: Prof. M. Isopi and Dr. E. Biffis (Imperial College, London), Grade: 110/110 cum laude.
- 2005-2008 **Bachelor Degree in Mathematics**, Dept. of Mathematics, Sapienza University of Rome, Italy. Thesis: *Determinazione dei prezzi per i servizi di telecomunicazione (Service pricing in the telecommunication market)*. Supervisor: Prof. M. Isopi, Grade: 110/110 cum laude.

## Visiting Positions

- 02.2024 **Visiting Researcher**, Faculty of Actuarial Science and Insurance, Bayes Business School, City University London, UK, research project with Dr. A. Tsanakas and S. Scognamiglio, 4 days.
- 07.2019 **Visiting Researcher**, Faculty of Actuarial Science and Insurance, Cass Business School, City University London, UK, research project with Dr. A. Tsanakas, 2 days.
- 03.2017 **Visiting Researcher**, Faculty of Actuarial Science and Insurance, Cass Business School, City University London, UK, research project with Dr. A. Tsanakas, 1 week.
- 10.2014 **Visiting Researcher**, Dept. of Statistics and Actuarial Science, University of Waterloo, Canada, research project with Prof. R. Wang, 3 weeks.
- 05-06.2014 **Visiting Researcher**, Dept. of Mathematics, ETH Zurich, Switzerland, Research project with Prof. P. Embrechts, 6 weeks.
- 08.2013 **Visiting Researcher**, Dept. of Statistics and Quantitative Methods, University of Milano-Bicocca, research project with Prof. F. Bellini, one week.

## Attended Courses

- 02.2016 **Extremes, Copulas and Actuarial Science**, Centre International de Rencontres Mathématiques, Marseille.
- 11.2015 **Risk aggregation and Fréchet problems**, Prof. R. Wang, Dependence and Risk Measures Workshop, Milan, Italy.
- 06.2013 **Enterprise Risk Management**, Prof. D. Ingram and Prof. S. Loisel, EPFL Lausanne, Switzerland.
- 08.2011 **Learning, Teaching and Assessment**, City University London, UK.
- 08.2010 **3rd SMAI European Summer School in Financial Mathematics**, Paris, France.
- 08.2010 **Financial Modeling with Levy Processes**, Prof. R. Cont, 6th Conference in Actuarial Science and Finance in Samos, Greece.

## Talks as Invited Speaker/Plenary

- 07.2024 **Advances in Risk Modelling and Applications to Finance and Climate Risk**, *Vienna, Austria*, Risk measurement under parameter uncertainty.
- 04.2024 **Department Seminar**, *Amsterdam, Netherlands*, Risk Measurement under parameter uncertainty.
- 10.2023 **Munich Risk and Insurance Days**, *Munich, Germany*, Fair Valuation under parameter uncertainty.
- 12.2022 **One World Actuarial Research Seminar**, *Online Seminar*, Inter-order relations between moments of a Student t distribution, with an application to  $L_p$ -quantiles.
- 06.2022 **Center of Research in Econo-finance and Actuarial sciences on Ris**, **ESSEC Business School**, *Paris, France*, Insurance valuation: A two-step generalised regression approach.
- 05.2017 **Recent Developments in Dependence Modeling with Applications in Finance and Insurance**, *Aegina, Greece*, On elicitable risk measures and dynamic expectiles.
- 09.2016 **Salzburg workshop on Dependence Models and Copulas**, *Salzburg, Austria*, Diversification limit of VaR under dependence uncertainty.
- 07.2016 **Workshop on Recent Advances in Quantile and M-Quantile Regression**, *Pisa, Italy*, On  $L_p$ -quantiles.
- 04.2016 **Scientific day of the DGVFM**, *Bremen, Germany*, On elicitable risk measures and backtesting.
- 04.2016 **Dept. seminar series**, *University of Verona, Italy*, On elicitable risk measures.
- 03.2016 **Workshop on Applied Statistics**, *Technische Universität Dresden, Germany*, Diversification limit of VaR under dependence uncertainty.
- 03.2016 **Dept. of Mathematics, Imperial College London, UK**, "*Diversification limit of VaR under dependence uncertainty*".
- 10.2015 **Workshop: "Risk Measures: Frontiers of Mathematics and Regulation"** **University of Bologna**, "*Diversification limit of VaR under dependence uncertainty*".
- 07.2015 **Politecnico of Milano**, "*Risk measurement under dependence uncertainty*".
- 04.2015 **Dept. of Statistics and Quantitative Methods, University of Milano-Bicocca**, "*Reducing model risk with positive and negative dependence assumptions*".
- 04.2015 **Prometeia seminar, Bologna**, "*How superadditive can a risk measure be?*".
- 04.2015 **Workshop "Copulae: On the crossroads of Mathematics and Economics"** **Oberwolfach**, "*Open problems in risk aggregation under dependence uncertainty*".
- 12.2014 **ETH Risk Center, Zurich**, "*How superadditive can a risk measure be?*".
- 11.2014 **Dept. of Economics and Finance, Luiss Guido Carli, Rome**, "*How superadditive can a risk measure be?*".

- 10.2014 **Dept. of Statistics and Actuarial Science, University of Waterloo, Canada**, “Reducing model risk with positive and negative dependence assumptions”.
- 10.2014 **Dept. of Statistics and Actuarial Science, University of Waterloo, Canada**, “On elicitable risk measures”.
- 05.2014 **Dept. of Mathematical Stochastics, University of Freiburg**, “How superadditive can a risk measure be?”.
- 05.2014 **Institute of Mathematical Stochastics, Leibniz University of Hannover**, “How superadditive can a risk measure be?”.
- 01.2014 **Workshop: “New trends in risk measures” Dept. of Statistics and Quantitative Methods, University of Milano-Bicocca**, “How superadditive can a risk measure be?”.
- 11.2013 **Faculty of Actuarial Science and Insurance, Cass Business School, City University London**, “Elicitable risk measures”.
- 11.2013 **Institute of Mathematical Statistics and Actuarial Science, University of Bern**, “Dynamic risk measurement and expectiles”.
- 08.2013 **Dept. of Statistics and Quantitative Methods, University of Milano-Bicocca**, “Dynamic risk measurement and expectiles”.
- 05.2013 **Dept. of Mathematics, ETH Zurich**, “Dynamic risk measurement and expectiles”.
- 05.2012 **Dept. of Mathematics, ETH Zurich**, “Quantifying and controlling the impact of model uncertainty on risk measurement”.

## Contributed Talks at International Conferences

- 06.2024 **4th Italian Meeting on Probability and Mathematical Statistics, Rome, Italy**, “Fair Valuation under parameter uncertainty”.
- 09.2023 **AMASES XXLVII, Milan, Italy**, “Fair Valuation under parameter uncertainty”.
- 06.2023 **Informa APS-23, Nancy, France**, “Fair Valuation under parameter uncertainty”.
- 09.2022 **AMASES XXLVI, Palermo, Italy**, “On the  $L_p$ -quantiles and the Student  $t$  distribution”.
- 03.2022 **XXIII Quantitative Finance Workshop, Rome, Italy**, “Insurance valuation: A two-step generalised regression approach”.
- 07.2021 **24th International Congress on Insurance: Mathematics and Economics, online**, “Insurance valuation: A two-step generalised regression approach”.
- 06.2019 **9th General AMaMeF Conference, Paris**, “Risk measures based on benchmark loss distributions”.
- 06.2016 **48th Scientific Meeting of the Italian Statistical Society, University Salerno**, “On the  $L_p$ -quantiles and the Student  $t$  distribution”.

- 12.2015 **8th International Conference of the ERCIM WG on Computational and Methodological Statistics**, *University of London, UK*, “Bayesian Inference for generalised quantiles”.
- 11.2015 **Dependence and Risk Measures**, *University of Milano-Bicocca, Italy*, “On dynamic expectiles”, (Poster presentation).
- 01.2015 **XVI Workshop on Quantitative Finance**, *University of Parma*, “Reducing model risk with positive and negative dependence assumptions”.
- 09.2014 **5th International Conference Mathematics in Finance**, *Skukuza, Kruger National Park South Africa*, “How superadditive can a risk measure be?”.
- 04.2014 **Imperial-ETH Zurich Workshop on Mathematical Finance**, *ETH Zurich*, “How superadditive can a risk measure be?”.
- 04.2014 **6th Mathematical and Statistical Methods for Actuarial Science and Finance**, *University of Salerno, Vietri sul Mare*, “Elicitable risk measures”.
- 01.2014 **XV Workshop on Quantitative Finance**, *University of Florence*, “Elicitable risk measures”.
- 07.2013 **The 17th International congress on Insurance: Mathematics and Economics**, *Copenhagen*, “Risk measurement and model uncertainty: a simulation study”.
- 01.2013 **Perspectives on Actuarial Risks in Talks of Young Researchers**, *Ascona*, “Quantification and control of residual estimation risk”.
- 04.2012 **5th Mathematical and Statistical Methods for Actuarial Science and Finance**, *Ca’Foscari University of Venice*, “Quantifying and controlling the impact of probability distribution estimation on risk measurement”.
- 06.2011 **The 15th International congress on Insurance: Mathematics and Economics**, *Trieste*.
- 06.2010 **6th Conference in Actuarial Science & Finance on Samos**, *University of the Aegean*, “Sequentially consistent risk measures”.

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## Research Interests

- Risk Measures.
- Quantitative Risk Management.
- Modeling with Copulae.
- Actuarial Mathematics.
- Dependence Modeling.
- Models for risk aggregation and diversification.
- Quantiles and generalised quantiles.

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## Teaching

- 2018-present **Lecturer**, *Actuarial Mathematics*, DISMEQ Department, University of Milano-Bicocca, Master level.
- 2016-present **Lecturer**, *Mathematics 1*, DISMEQ Department, University of Milano-Bicocca, for bachelor students.
- May 2023 **Lecturer**, *An introduction to risk measures*, MEMOTEF Department, Sapienza University of Rome, 8 hours course for PhD students.
- May 2021 **Lecturer**, *An introduction to risk measures*, MEMOTEF Department, Sapienza University of Rome, 8 hours course for PhD students.
- 2016-17 **Teaching Assistant**, *Actuarial Mathematics*, DISMEQ Department, University of Milano-Bicocca, Master level.
- 2016-17 **Teaching Assistant**, *Mathematical Finance*, LUISS Guido Carli, for bachelor students.
- 2015-16 **Lecturer**, *Introduction to risk measures*, MEMOTEF Department, Sapienza University of Rome, for PhD students.
- 2015-16 **Teaching Assistant**, *Time series analysis*, University of Rome, Italy, Master level.
- 2014-15 **Teaching Assistant**, *Quantitative Finance and Derivatives*, University of Florence, Italy, Undergraduate and Master level.
- 2013-14 **Lecturer**, *Risk measures*, Dept. of Mathematics, ETH Zurich, Undergraduate and Master level.
- 2010-11 **Teaching Assistant**, *Statistics and Probability II*, Cass Business School, City University London, UK, Undergraduate level.
- 2009-10 **Teaching Assistant**, *Statistics and Probability II*, Cass Business School, City University London, UK, Undergraduate level.
- 2008-09 **Teaching Assistant**, *Statistics and Probability II*, Cass Business School, City University London, UK, Undergraduate level.

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## Journal services

- Referee for **Decisions in Economics and Finance**, **Quantitative Finance**, **Astin Bulletin**; **Journal of Mathematical Analysis and Applications**; **Applied Stochastic Models in Business and Industry**, **Stochastics and Risk Modeling**; **Insurance: Mathematics and Economics**; **The European Journal of Finance**; **Scandinavian Actuarial Journal**; **Mathematics and Financial Economics**; **Annals of Operations Research**; **Operations Research Letters**, **Mathematical Finance**, **Risks**, **Methodology and Computing in Applied Probability**, **European Journal of Operational Research**, **Dependence Modeling**.
- 06.14-08.15 **Assistant Editor for Dependence Modeling** (<http://www.degruyter.com/view/j/demo>), *Editor: G. Puccetti; Associate Editors: F. Durante, M. Scherer, S. Vanduffel*.

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## Grants, Scholarships and Awards

- 2020 **Indam-GNAMPA 2020 fundings for the project "Capital allocation per premi di Orlicz e misure di rischio di Haezendonck-Goovaerts"** with Prof. Rosazza-Gianin (P.I.), Prof. Francesca Centrone and PhD Gabriele Canna, *Eur 1575*.
- 2019 **FAQC fundings for researchers (University of Milano-Bicocca)** with Prof. Bellini, Prof. Rosazza-Gianin, PhD A. M. Fiori, *Eur 15000*.
- 2017 **FFABR fundings for researchers**, *Eur 3000*.
- 2016 **GNAMPA fundings to participate at the 40th AMASES Meeting**, *Eur 200*.
- 2012 **Dimitris N. Chorafas foundation award for the PhD Thesis**, *US \$4000*.
- 2011 **Research funding**, *The impact of model error on capital adequacy*, sponsored by the Institute of Actuaries (Primary investigator Dr A. Tsanakas), *\$8000*.
- 2010 **Award for best contribution to the conference**, *6th Conference in Actuarial Science and Finance in Samos, Greece*.
- 2008 **Cass Business School Doctoral Bursary**, *City University London, UK*.
- 2006 **Erasmus scholarship**, *Dept. of Mathematics, Royal Holloway University, London, UK*.

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## Academic responsibilities

- 10.2024-present **Coordinator of the Master degree "Economia e Finanza"**, *Dismeq, University of Milano-Bicocca*.
- 10.2021-09.2024 **Vice-coordinator of the Master degree "Economia e Finanza"**, *Dismeq, University of Milano-Bicocca*.
- 2020-present **Member of the PhD Program "Modelli per l'Economia e la Finanza"**, *MEMOTEF Department, University of Rome*.
- 2023-present **Coordinator of the Birkbeck-Bicocca double degree program in "Economia e Finanza"**, *Dismeq, University of Milano-Bicocca*.
- 2021-present **Coordinator of the Erasmus Program for the Master degree "Economia e Finanza"**, *Dismeq, University of Milano-Bicocca*.
- 10.2021-09.2024 **Coordinator of the first year tutor**, *Dismeq, University of Milano-Bicocca*.
- 10.2019-09.2022 **Member of the CPDS committee (Commissione paritetica)**, *Dismeq, University of Milano-Bicocca*.

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## Other Activities

- 2024 **Organizer of the special session "Recent findings in Finance and Insurance"** (with C. De Vecchi) for the conference AMASES XLVIII, *Department of Economics and Statistics, University of Naples, Italy*.

- 2023 **Organizer of the special session “Risk and Uncertainty in Economics, Finance and Insurance”** (with K. Colaneri and A. Calvia) for the conference **AMASES XLVII**, *Department of Statistics and Quantitative Methods, University of Milan-Bicocca Italy*.
- 2023 **Member of the organising committee for the conference AMASES XLVII**, *Department of Statistics and Quantitative Methods, University of Milan-Bicocca Italy*.
- 2023 **External referee for Corrado de Vecchi PhD degree** (under the supervision of C. Bernard and S. Vanduffel), *VUB Brussels, Belgium*.
- 2017-present **Member of the AMASES (Associazione per la matematica applicata alle scienze economiche e sociali)**.
- 2016-present **Member of the GNAMPA (Gruppo Nazionale per la Analisi Matematica, la Probabilità e le loro Applicazioni)**.
- 2016 **Member of the SIS (Società Italiana Statistica)**.
- 2014 **Member of the organising committee for the conference Dependence in Risk Management and Risk Measurement**, *School of Economics and Management, University of Florence, Italy*.
- 2013-2014 **Organizer of the RiskLab PhD seminars**, *RiskLab, Dept. of Mathematics, ETH Zurich*.
- 2012-2014 **PhD Representative in the Research Committee**, *Cass Business School, City University London, UK*.

## Working paper

1. V. Bignozzi, S. Scognamiglio and A. Tsanakas. *Fair valuation under parameter uncertainty*.
2. V. Bignozzi, C. De Vecchi. *Risk bounds under tail uncertainty*.

## Publications

1. V. Bignozzi, L. Merlo and L. Petrella. *Inter-order relations between equivalence for  $L_p$ -quantiles of the Student's  $t$  distribution*. **Insurance Math. Econ.**, 116, 44–50, 2024.
2. K. Barigou, V. Bignozzi and A. Tsanakas. *Insurance valuation: a two-step generalised regression approach*. *Astin Bulletin*, 52, 211–245, 2022.
3. V. Bignozzi, C. Macci and L. Petrella. *Large deviations for method-of-quantiles estimators of one-dimensional parameters*. **Comm. Statist. Theory Methods**, 49, 1132–1157, 2020.
4. V. Bignozzi, M. Burzoni and C. Munari. *Risk measures based on benchmark loss distributions*. **Journal of Risk and Insurance**, 87, 437–475, 2020.
5. F. Bellini, V. Bignozzi and G. Puccetti. *Conditional expectiles, time consistency and mixture convexity properties*. **Insurance Math. Econ.**, 82, 117–123, 2018.
6. V. Bignozzi, C. Macci and L. Petrella. *Large deviations for risk measures in finite mixture models*. **Insurance Math. Econ.** 80, 84–90, 2018.
7. A. V. Asimit, V. Bignozzi, K. C. Cheung, J. Hu and E-S. Kim. *Robust and Pareto optimality of insurance contracts*. **European J. Oper. Res.**, 262(2), 720–732, 2017. Impact Factor 2.595.
8. M. Bernardi, V. Bignozzi and L. Petrella. *On the  $L_p$ -quantiles for the Student  $t$  distribution*. **Statist. Probab. Lett.**, 128, 77–83, 2017. Impact Factor 0.6.

9. V. Bignozzi, A. Tsanakas. *Parameter uncertainty and residual estimation risk*. **Journal of Risk and Insurance**, 83(4), 949–978, 2016. Impact Factor 1.41.
10. V. Bignozzi. *On the  $L_p$ -quantiles and the Student  $t$  distribution*. **Peer-reviewed proceedings of the 48th Scientific Meeting of the Italian Statistical Society**. ISBN: 9788861970618, 2016.
11. V. Bignozzi, T. Mao, B. Wang and R. Wang. *Diversification limit of quantiles under dependence uncertainty*. **Extremes** 19(2), 143–170, 2016. Impact Factor 1.33
12. V. Bignozzi and A. Tsanakas. *Model uncertainty in risk capital measurement*. **The Journal of Risk** 18(3), 1–24, 2016. Impact Factor 0.34 .
13. F. Delbaen, F. Bellini, V. Bignozzi and J. Ziegel. *Risk Measures with CxLS*. **Finance Stoch.** 20(2), 433–453, 2016. Impact Factor 1.44.
14. V. Bignozzi, G. Puccetti and L. Rüschendorf. *Reducing model risk using positive and negative dependence assumptions*. **Insurance Math. Econ.** 61(1), 17–26, 2015. Impact Factor 1.13.
15. R. Wang, V. Bignozzi and A. Tsanakas. *How superadditive can a risk measure be?* **SIAM J. Finan. Math.** 6(1), 776–803, 2015. Impact Factor 1.01.
16. F. Bellini and V. Bignozzi. *On Elicitable Risk Measures*. **Quant. Finance** 15(5), 725–733, 2015. Impact Factor 0.65.
17. V. Bignozzi and G. Puccetti. *Studying mixability with supermodular aggregating functions*. **Statist. Probab. Lett.** 100, 48–55, 2015. Impact Factor 0.6.
18. V. Bignozzi. *Open problems in risk aggregation under dependence modelling*. **Oberwolfach Report (OBW) No. 20/2015**, DOI: 10.4171/OWR/2015/20 book series (ISSN 1660-8933).

“Le dichiarazioni rese nel presente curriculum sono da ritenersi rilasciate ai sensi degli artt. 46 e 47 del D.P.R. 445/2000”