

UNIVERSITÀ DEGLI STUDI DI MILANO

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settore scientifico-disciplinare: SECS-S/06 - Metodi Matematici dell'Economia e delle Scienze Attuariali e Finanziarie

presso il Dipartimento di ECONOMIA, MANAGEMENT E METODI QUANTITATIVI

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## **Asmerilda Hitaj**

### **CURRICULUM VITAE**

#### **INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)**

<b>COGNOME</b>	HITAJ
<b>NOME</b>	ASMERILDA
<b>DATA DI NASCITA</b>	19/11/1981

#### **CURRENT POSITION**

- Since October 2018: Assistant Professor (RTD-A), sector SECS-S/06, Department of Statistics and Quantitative Methods, University of Milano-Bicocca
- August 14<sup>th</sup>, 2019 - August 14<sup>th</sup>, 2028 *National Scientific Habilitation (ASN)* for the position of Associate Professor, SECS-S/06-Mathematical Methods of Economics, Finance and Actuarial Sciences

#### **PAST POSITIONS**

- **April 2018 – September 2018:** Postdoctoral Research Fellow in Quantitative Finance, sector SECS-S/06, University of Pavia. Subject: Robust optimization and applications to economics and finance. Under the supervision of Professor Elena Molho.
- **2014 – 2017:** Postdoctoral Research Fellow in Quantitative Finance, sector SECS-S/06, University of Milano-Bicocca (IT). Subject: Multicriteria Analysis for Portfolio Performance. Under the supervision of Professor Giovanni Zambruno.
- **2010 – 2013:** Postdoctoral Research Fellow in Quantitative Finance, sector SECS-S/06, University of Milano-Bicocca (IT). Subject: Mathematical Models for Hedge Funds Portfolio Allocation. Under the supervision of Professor Giovanni Zambruno

#### **EARNED DEGREES**

- **2007 – 2010:** PhD in Mathematics Applied to Finance, University of Milano Bicocca (IT).
- **2008 – 2009:** Master in Risk and Asset Management, EDHEC Business School, NICE, (FR).
- **2003 – 2006:** MSc in Finance and Economics - 110 / 110 cum laude, University of Milano Bicocca. Title of thesis: Performance Attribution and Risk Attribution for Fixed Income Portfolio.

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## VISITING POSITIONS

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- February 2017 – July 2017: Visiting Researcher: School of Industrial & Systems Engineering, Georgia Institute of Technology, Atlanta, USA. Research project with Professor Anton Kleywegt, 6 months.
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## AWARDS

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- 01 November 2006 – 28 February 2010: PhD fellowship in Mathematics Applied to Finance with University of Milano Bicocca.
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## PARTICIPATION IN RESEARCH PROJECTS

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- **Member of the project:** “Infinitely divisible distributions for portfolio allocation”. Coordinator: Edit Rroji. Participants: Asmerilda Hitaj, Emanuela Rosazza, Claudio Macci. Euro 3000. Financed by GNAMPA (2018)
  - **Member of the project.** n. 35364 “Advanced Methods for Portfolio Optimization” of the “MIUR-DAAD Joint Mobility Program” P.I. Lorenzo Mercuri, members: Sandra Paterlini and Margherita Giuzio (German unit), Asmerilda Hitaj and Edit Rroji (Italian unit) Euro 10.000. Financed by MIUR (2018).
  - **Member of the project:** “Levy processes, stochastic control and portfolio optimization”. Coordinator: Elisa Mastrogiacomio. Participants: Emanuela Rosazza, Asmerilda Hitaj. Financed by GNAMPA (2016)
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## RESEARCH INTERESTS

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- Asset allocation models in discrete and continuous time.
  - Hedge fund portfolio selection using higher moments.
  - Asset and liability management
  - Robust optimization
  - Risk and performance measures
  - Portfolio insurance strategies
  - Option pricing
  - Numerical methods for finance
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## TEACHING ACTIVITIES

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- **Teaching assistant:** for the course **Financial Mathematics** (2-nd year undergraduate), University of Milano-Bicocca, Department of Quantitative Methods. During the academic years 2007-2008, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017
- **Teaching assistant:** for the course **Actuarial Mathematics** (1-st year postgraduate), University of Milano-Bicocca, Department of Quantitative Methods. During the academic years 2007-2008, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016
- **Teaching assistant:** for the course **Portfolio theory** (1-st year postgraduate). University of Milano-Bicocca, during the academic years 2014-2015, 2015-2016, 2016-2017
- **Teaching assistant:** for the course **Mathematics** (2-nd year undergraduate), Università degli Studi di Milano. During the academic year 2017-2018
- **Professor:** for the course **Actuarial Mathematics** (3-rd year undergraduate), University of Milano-Bicocca. During the academic year 2013-2014

- **Professor:** for the course **Mathematics Methods** (2-rd year undergraduate), University of Milano-Bicocca. During the academic years 2017-2018, 2018-2019, 2019-2020
- **Professor:** for the course **Matlab applied to finance** (1-st year postgraduate), University of Pavia. During the academic year 2017-2018.
- **Professor:** for the course **Applied Statistics for Finance** (postgraduate), University Cattolica del Sacro Cuore, Milan. During the academic year 2017-2018.
- **Professor:** for the course **Mathematics for finance** (postgraduate). University of Pavia. During the academic year 2018-2019.
- **Professor:** for the course **Fundamentals of Actuarial Mathematics** (3-rd year undergraduate), University of Milano-Bicocca. During the academic year 2019-2020.
- **Teaching assistant:** for the course **Asset Management** (Executive courses on Quantitative Finance), Politecnico di Milano. During the academic year 2019-2020.

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#### THESIS SUPERVISION

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- Supervisor of the Master thesis of Fabrizio Lilliu "*Pricing FX Investment Certificates with Stochastic Interest Rates*" (2018), Catholic University.

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#### WORK EXPERIENCE

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- **May 2006 – Nov 2006:** Internship at RAS BANK (custodian bank), Milano, Italy. My job consisted in analysing and verifying the informative rules of the various Hedge Funds invested in by clients of the RAS BANK to create a data base.
- **Jun 2009 – Sep 2009:** Internship at Albertini-SYZ SGR, Milano, Italy. This job consisted in creating a program, with VBA, that the SGR used to calculate the liquidity of the portfolio, taking into account the informative rules for the different hedge funds, like: withdrawal restrictions, redemption dates, notice deadlines, redeemable weight and potential penalty amounts. Accounting for all this information is important for a hedge fund manager in order to optimize the trading opportunities, minimize portfolio costs and maximize portfolio returns.
- **Dec 2015 – Dec 2016:** Assistant Editor for the Springer volume "Recent Advances in commodity and financial modeling. Quantitative methods in Banking, Finance, Insurance, Energy and Commodity markets" edited by Giorgio Consigli, Silvana Stefani and Giovanni Zambruno, 'International Series in Operations Research and Management Science'

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#### RESEARCH ACTIVITY

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##### A. PUBLISHED AND FORTHCOMING PAPERS

- [1] A. Hitaj, L. Mercuri and E. Rroji (2019). Lévy CARMA models for shocks in mortality. **DECISIONS IN ECONOMICS AND FINANCE**, ISSN: 1593-8883, doi: 10.1007/s10203-019-00248-9
- [2] G. P. Clemente, R. Grassi, A. Hitaj (2019). Asset allocation: new evidence through network approaches. **ANNALS OF OPERATIONS RESEARCH**, p. 1-20, ISSN: 0254-5330, doi: 10.1007/s10479-019-03136-y

- [3] G. Consigli, A. Hitaj, E. Mastrogiamco (2018). Portfolio choice under cumulative prospect theory: sensitivity analysis and an empirical study. **COMPUTATIONAL MANAGEMENT SCIENCE**, p. 1-26, ISSN: 1619-697X, doi: 10.1007/s10287-018-0333-x
- [4] A. Hitaj, L. Mercuri and E. Rroji (2018). Sensitivity analysis of Mixed Tempered Stable parameters with implications in portfolio optimization. **COMPUTATIONAL MANAGEMENT SCIENCE**, p. 1-25, ISSN: 1619-697X, doi: 10.1007/s10287-018-0306-0
- [5] A. Hitaj, F. Hubalek, L. Mercuri and E. Rroji (2018). On Properties of the MixedTS Distribution and Its Multivariate Extension. **INTERNATIONAL STATISTICAL REVIEW**, ISSN: 0306-7734, doi: 10.1111/insr.12265
- [6] A. Hitaj, C. Mateus and I. Peri (2018). Lambda Value at Risk and Regulatory Capital: A Dynamic approach to Tail Risk. **RISKS**, vol. 6, 17, ISSN: 2227-9091, doi: <https://doi.org/10.3390/risks6010017>
- [7] A. Hitaj and G. Zambruno (2016). Are Smart Beta strategies suitable for hedge fund portfolios? **REVIEW OF FINANCIAL ECONOMICS**, vol. 29, p. 37-51, ISSN: 1058-3300, doi:10.1016/j.rfe.2016.03.001
- [8] A. Hitaj, L. Mercuri and E. Rroji (2015). Portfolio selection with independent component analysis. **FINANCE RESEARCH LETTERS**, vol. 15, p. 146-159, ISSN: 1544-6123, doi: 10.1016/j.frl.2015.09.005
- [9] A. Hitaj and L. Mercuri Portfolio allocation using multivariate variance gamma models. **FINANCIAL MARKETS AND PORTFOLIO MANAGEMENT**, vol. 27, p. 65-99, ISSN: 1934-4554
- [10] A. Hitaj, L. Martellini and G. Zambruno (2012). Optimal Hedge Fund Allocation with Improved Estimates for Coskewness and Cokurtosis Parameters. **THE JOURNAL OF ALTERNATIVE INVESTMENTS**, vol. 14, p. 6-16, ISSN: 1520-3255, doi: 10.3905/jai.2012.14.3.006
- [11] A. Hitaj, F. Martinelli and G. Zambruno. Universal Performance Measures per Investimenti Alternativi, (2014). **Quaderno AIAF** n:158, (2013) ISSN 2280-949X.

## B. PUBLISHED AND FORTHCOMING CHAPTERS IN BOOK

- [1] G. P. Clemente, R. Grassi and A. Hitaj (2019). 'Optimal Portfolio Selection via network theory in banking and insurance sector'. In Smart Statistics for Smart Applications (pp. 197-204). edited by G. Ariba, S. Peluso, A. Pini and G. Rivellini. ISBN 9788891915108, PEARSON.
- [2] A. Hitaj, L. Mercuri and E. Rroji (2018). 'VIX computation based on affine stochastic volatility models in discrete time'. **INTERNATIONAL SERIES IN OPERATIONS RESEARCH & MANAGEMENT SCIENCE**, edited by G. Consigli, S. Stefani and G. Zambruno. vol.257, p. 141-164, Springer New York LLC, ISBN: 978-3-319-61318-5, ISSN: 0884-8289, doi: 10.1007/978-3-319-61320-8\_7 (peer review).
- [3] A. Hitaj and G. Zambruno (2018). 'Portfolio Optimization Using Modified Herfindahl Constraint.' **INTERNATIONAL SERIES IN OPERATIONS RESEARCH & MANAGEMENT SCIENCE**, edited by G. Consigli, S. Stefani and G. Zambruno. vol.257, p. 141-164, Springer New York LLC, ISBN: 978-3-319-61318-5, doi: 10.1007/978-3-319-61320-8\_1 (peer review).
- [4] A. Hitaj, L. Mercuri and E. Rroji (2018). Some Empirical Evidence on the Need of More Advanced Approaches in Mortality Modeling. In: Mathematical and Statistical Methods for Actuarial Sciences and Finance. Edited by M. Corazza, M. Durbán, A. Grané, C. Perna. M. Sibillo. p. 425-430, Springer, ISBN: 978-3-319-89823-0, doi: 10.1007/978-3-319-89824-7\_76
- [5] A. Hitaj, F. Hubalek, L. Mercuri and E. Rroji (2016). 'On multivariate extensions of the Mixed Tempered Stable distribution'. Proceedings of COMPSTAT 2016 - 22nd International Conference on Computational Statistics, edited by A. Colubi, A. Blanco and C. Gat. (peer review). The International Statistical Institute / International Association for Statistical Computing ISBN/EAN: 978-90-73592-36-0, pag. 159-167 (peer review)

- [6] A. Hitaj, F. Martinelli and G. Zambruno (2014). Portfolio Allocation Using Omega Function: An Empirical Analysis. In Mathematical and Statistical Methods for Actuarial Sciences and Finance, edited by M. Corazza, C. Pizzi. p. 179-193, Springer, ISBN: 978-331902498-1, *doi: 10.1007/978-3-319-02499-8-17*
- [7] A. Hitaj and L. Mercuri (2013). 'Hedge Fund Portfolio Allocation with Higher Moments and MVG Models'. In Advances in Financial Risk Management, edited by J. A. Batten, P. MacKay and N. Wagner, Palgrave Macmillan. pp 331-346, ISBN: 978-1-349-43874-7 (peer review)

## C. PHD THESIS

"Portfolio allocation under general return distribution", 2010, PhD thesis:  
<http://boa.unimib.it/handle/10281/11961#.UlqjQ1N0tiY>

## D. WORKING PAPER

A. Hitaj, "Efficient Joint Estimation of Parameters in a Core-Satellite Portfolio Management" (2009). Working paper N°179, Dipartimento delle scienze Economiche ed Aziendali, Università di Milano Bicocca.

## E. SUBMITTED PAPERS

- [1] Gian Paolo Clemente, Rosanna Grassi and Asmerilda Hitaj. 'Smart network based portfolio selection models'.

## F. WORK IN PROGRESS

- [1] Giorgio Consigli, Rui Gao, Asmerilda Hitaj, and Anton J. Kleywegt, 'ALM under distributionally robust optimization'.
- [2] Asmerilda Hitaj, Elisa Mastrogiacomo and Elena Molho, 'Robust Multi-objective portfolio optimization'.
- [3] Michele Bianchi, Asmerilda Hitaj, Lorenzo Mercuri, Edit Rroji and Gian Luca Tassinari, 'Multivariate models for financial applications'.
- [4] Asmerilda Hitaj, 'Longevity risk model error: how much does it cost to a life insurance company?'
- [5] Asmerilda Hitaj and Elisa Mastrogiacomo, 'Jump diffusions and portfolio optimization with state dependent risk aversion', presented in a Poster section at the conference: XVII Quantitative Finance Workshop, Pisa (Italy)
- [6] Alessandro Avellone, Ilaria Foroni and Asmerilda Hitaj. 'A Particle Swarm Optimization algorithm for portfolio allocation with cardinality constraints'.

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## PRESENTATIONS IN ACADEMIC CONFERENCES AND SEMINARS

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- **15 Apr – 17 Apr 2020:** Accepted for presentation at the 9<sup>th</sup> International Conference on Mathematical and statistical methods for actuarial sciences and finance (MAF2020), Geneva ( Switzerland)
- **9 – 11 Sep 2019:** Presenter at the conference AMASES XLIII 2019, Perugia (Italy)
- **23 – 26 Jun 2019:** Presenter at the conference EURO 2019, Dublin (Ireland)
- **13 – 15 Sep 2018:** Presenter at the conference: AMASES 2018, Napoli (Italy)
- **29 – 31 May 2018:** Presenter (**invited**) at the XV conference on computational management science (CMS 2018). Trondheim (Norway).
- **September 2017:** Invited speaker at a Seminar: 'ALM under distributionally robust optimization'. Pavia (Italy)
- **14 – 16 Sep 2017:** Presenter at the conference: AMASES 2017, Cagliari (Italy)
- **15 – 17 Sep 2016:** Presenter at the conference: AMASES 2016, Catania (Italy)

- **23 – 26 Aug 2016:** Presenter at the conference: COMPSTAT 2016, Oviedo (Spain)
- **28 – 29 Jan 2016:** Presenter at the conference: XVII Quantitative Finance Workshop, Pisa (Italy)
- **11 – 13 Jun 2015:** Presenter at the conference: 5th International Conference of the Financial Engineering and Banking Society, Nantes (France)
- **14 – 16 May 2015:** Presenter at the conference: Euro working group for Commodities and finance, Ankara (Turkey)
- **4 – 6 Dec 2014:** Presenter at the conference: Euro working group for Commodities and finance, Milan (Italy)
- **7 – 9 Jul 2014:** Presenter at the Second Young researchers meeting on BSDEs, Numerics and Finance. Bordeaux (France).
- **6 – 8 Jun 2013:** Presenter at the conference: 3-rd International Conference of the Financial Engineering and Banking Society. Paris. (France)
- **10 – 12 Apr 2012:** Presenter at the conference: Mathematical and Statistical Methods for Actuarial Science and Finance, Venice (Italy)
- **13 – 15 Sep 2012:** Presenter at the conference: Amases XXXVI 2012 Vieste, Italia
- **Nov 2011:** Invited speaker at the Seminar: Portfolio Allocation Using Multivariate Variance Gamma Distribution. Milano (Italy)
- **15 – 17 Sep 2011:** Presenter at the conference: XXXV Convegno Amases, Pisa (Italy).
- **27 – 28 Jan 2011:** Presenter and contributed speaker at the conference: XII Workshop of Quantitative Finance, Padova.

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#### MEMBERSHIP

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- **2012 – 2015 member of AIAF** (Associazione Italiana degli Analisti Finanziari). Member of the project: “Advanced models for finance”.
- **Since June 2010** member of the **AMASES** (Association of Applied Math for Social and Economics Science) association.
- **Since January 2016** member of the National group for Mathematical Analysis, Probability and their Applications (**GNAMPA**) of the National institute of Mathematics (INDAM).

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#### CONFERENCE ORGANIZATION AND SUPPORT

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- **Sep 2014 – Dec 2014:** Member of the Organizing Committee for the Conference: Euro Working Group for Commodities and Financial Modelling; held in Milan, Italy - Dec. 4-6, 2014.
- **Sep-2018** Conference AMASES 2018, organizer of the special session entitled ‘Time series modeling in finance and insurance’ with Edit Rroji. Naples, Italy.
- **Sep-2019** Conference AMASES 2019, organizer of the special sessions entitled ‘Innovative models for insurance’ and ‘Advanced methods in financial modeling’ with Edit Rroji, Annamaria Gambaro and Immacolata Oliva. Perugia, Italy.
- **Nov 2019 – Jul 2020:** Member of the Technical Program Committee of the 4-th International Conference on Computer, Software and Modeling. Rome, Italy - July 17-19, 2020.
- **Nov 2019 – Apr 2020:** Member of the Scientific and Paper Review Committee of the ‘Global Conference on Services and Retail Management’ (GLOSERV 2020). Naples, Italy - Apr 7-10, 2020
- **Jan 2020 – Jul 2020** Member of the Technical Program Committee of the Computing Conference 2020. London, United Kingdom - July 16-17, 2020.

- **Feb 2020 – Jun 2020** Member of the Technical Program Committee of the 2-nd International Conference On Industrial Control Network And System Engineering Research (ICNSER2020). Kuala Lumpur, Malaysia - June 19-20, 2020.
- **Feb 2020 – Mar 2020** Member of the Technical Program Committee of the **International Conference On Computing Science, Communication and Security (COMS2)**. Gujarat, India - March 26-28, 2020.

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#### SUMMER AND WINTER SCHOOLS

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- **Jul 3 – 16, 2011:** Summer course in Mathematics, Cortona, Italy.  
Course: “Stochastic and Numerical Methods in Finance”
- **Aug 2007:** Summer course in Mathematics, Perugia, Italy.  
Courses: “Probability” & “Operational Research”
- **Oct 25 – 27, 2016:** International School in Actuarial Mathematics (UNISActuarial School 2016). Salerno, Italy.
- **Jan 15 – 21, 2017:** Stochastic programming with applications in energy, logistics and finance, Passo del Tonale, Italy

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#### REFEREE ACTIVITIES

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Financial Markets and Portfolio Management; International Review of Financial Analysis; Annals of operations research; Decisions in Economics and Finance; International Journal of Business Intelligence and Data Mining

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#### COMPUTER SKILLS

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- Software Applications: Scientific WorkPlace 5.5, Microsoft Office (Word, Excel, Power Point).
- Econometrics and Statistics software: E-views, Gauss.
- Programming languages: C, MATLAB, Visual Basic, R.

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#### LANGUAGE SKILLS

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**Italian** – Excellent      **English** – Fluent      **Albanian** - Native Speaker

Data 16/02/2020

Firma

