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SSRN page, Google Scholar page

Current Position

- Associate Professor of Actuarial Finance, Finance Group, Imperial College Business School. Aug12-present

Professional experience

- Previous positions:
  - Assistant Professor, Finance Group, Imperial College Business School. Oct07-Jul12.
  - Lecturer (RCUK fellowship), Faculty of Actuarial Science and Insurance, Cass Business School, Sep05-Sep07.
  - Research fellow, Institute for Quantitative Methods, Bocconi Milan, Sep04-Aug05.
- External Positions:
  - Centralized Clearing of OTC Derivatives Working Party, Institute of Actuaries: Member, Feb12-present.
  - HIPERFIT (Research Center for Functional High-Performance Computing for Financial Information Technology), University of Copenhagen: Scientific Advisory Board, Dec10-present.
  - Munich Risk and Insurance Centre: Associate, Feb10-present.
  - Pensions Institute, London: Fellow, Aug08-present.
  - Benchmarking for Stochastic Models Working Party, Institute of Actuaries: Member, Dec07-09.
  - Economics and Research Department, Association of British Insurers (on secondment from Cass Business School), Oct05-Mar06.
- Editorial boards:
  - Co-editor of *ASTIN Bulletin - The Journal of the International Actuarial Association.*
  - Associate editor of *Risks.*
- Visits:
  - Short: Center for Economic Analysis of Risk, GSU, Apr11; Ecole Polytechnique, Paris VI, ISFA Lyon, Jan/Feb11.
  - Long (more than three weeks): Luiss Rome, May11; Australian School of Business, UNSW, Sydney, Jun/Jul09; Applied Mathematics, University of Trieste, Dec08; K.U. Leuven (Fortis Chair in Financial and Actuarial Risk Management), Mar08; Bocconi Milan, Feb,May07.
- Imperial Space Lab, Natural and Space Hazards research section and member of the Steering Committee (representing Imperial College Business School and the Grantham Institute for Climate Change).

Education

- Ph.D. in Mathematics for Economic Decisions, University of Trieste (joint program with Bocconi Milan, Turin, Venice, Verona), 2001-2004 (awarded Oct06). Thesis: *Stochastic models for dynamic mortality: Actuarial applications.*
- MSc in Actuarial Management, Cass Business School, Jul03.
- Laurea (BSc & MSc) in Statistics, University of Trieste, Nov99.

Awards

- The Institute of Actuaries, Peter Clark Prize 2009, *Modelling extreme market events.*
- Italian Institute of Actuaries, Giuseppe Ottaviani Prize 2006, *Lee-Carter goes risk-neutral.*

- Mutua Pelajo Prize 2004, *The fair value of guaranteed annuity options.*
- SCOR UK 1st Actuarial Prize 2004, MSc Dissertation *New accounting standards: The fair value of life insurance liabilities.*
- Alleanza Assicurazioni, 'Mario Gasbarri' postgraduate scholarship, 2001-2002.
- Alleanza Assicurazioni, Laurea Thesis Award, 2000.

Research grants

- *Weather Index-based & Weather-driven Risk Services* (with Wouter Buytaert and Erik Chavez at Imperial, and in collaboration with Sainsbury's, Swiss Re, and the World Bank), EIT/Climate-KIC, 2014-17, EUR 550k. [co-PI] *Submitted, admitted to second stage.*
- *OASIS PLUS* (with Ralf Toumi [PI]), European Institute of Technology and European Space Agency, 2014-17, EUR 3.5m. [CI] *Submitted.*
- PI for the Financial Module of *OASIS - Open Access Loss Modelling Framework* (with Ralf Toumi [PI], John Polak, Wouter Buytaert at Imperial, and TU Delft, IPSL Paris), EIT/Climate-KIC, EUR 400k (total grant EUR 3.6m). [CI]
- *Modeling large losses in the insurance industry*, Financial Services KTP (NERC,TSB, ESRC, HCI, Liberty, Hiscox), £ 614k, 2011-13. [PI]
- *Risk appetite indexing* (with N. Meade), Financial Services KTP (TSB, ESRC, Willis), £ 138k, 2010-12. [PI]
- *Modeling and Risk Management Implications of Weather-related Extreme Events* (with B. Hoskins, W. Distaso), Imperial EPSRC Strategic Fund, £ 35k, 2010. [CI]
- *Informed intermediation of longevity exposures: Pension buyouts and ILS investment* (with D. Blake), CAREFIN, Bocconi Milan, £ 4k, 2009. [PI]
- *Sequential analysis of insurance data* (with A. Tsanakas), UK Institute of Actuaries, £ 14k, 2008. [PI]
- *On a generalization of the Gerber-Shiu function* (with M. Morales), US Society of Actuaries, $ 10k, 2007. [CI]

Work in progress & working papers

- Stock-bond correlation swaps (with Farouk Jivraj, Robert Kosowski)
- Gauging the basis risk of longevity swaps (with Ariel Sun)
- Insurance contract design and endogenous frailty (with Davide Benedetti)
- Optimal collateralization with bilateral default risk (with Daniel Bauer, Rocio Sotomayor), *finalist for EGRIE/SCOR Young Insurance Economist Best Paper Award 2013*
- Optimal retirement and asset allocation with sticky wages (with Fausto Gozzi, Cecilia Prosdocimi)
- Optimal investment and retirement decisions: the impact of health shocks (with Emilio Barucci, Daniele Marazzina)
- Optimal annuitization with unspanned mortality risk (with Giovanna Nappo, Vanessa Raso)
- Dynamic incentives with event risk (with Caterina Lepore)
- Monitoring capital requirements under parameter uncertainty (with A. Tsanakas)
- Optimal insurance with counterparty default risk (with P. Millossovich), under revision
- How to start a capital market in longevity risk transfers (with D. Blake), revise and resubmit to the *North American Actuarial Journal*
- The cost of counterparty risk and collateralization on longevity swaps (with D. Blake, L. Pitotti, A. Sun), revised and resubmitted to *The Journal of Risk and Insurance*

Publications

- Managing capital market risk for retirement (with R. Kosowski), to appear in *Recreating Sustainable Retirement: Extreme Risk and Pension Security*, Oxford University Press (eds. Raimond Maurer, Olivia Mitchell).
- Informed intermediation of longevity exposures (with D. Blake), *Journal of Risk and Insurance*, 2013, vol. 80(3), pp. 559-584.
- A note on scale functions and the time value of ruin for Lévy risk processes (with A. Kyprianou), *Insurance: Mathematics & Economics*, 2010, vol. 46(1), pp. 85-91.

- On an extension of the Gerber-Shiu function to path-dependent penalties (with M. Morales), *Insurance: Mathematics & Economics*, 2010, vol. 46(1), pp. 92-97.
- Mortality-linked securities and derivatives (with D. Blake), *Optimizing the Aging, Retirement and Pensions Dilemma* (M. Bertocchi, S.L. Schwartz,W.T. Ziemba eds.), 2010, John Wiley & Sons.
- Securitizing and tranching longevity exposures (with D. Blake), *Insurance: Mathematics & Economics*, 2010, vol. 46(1), pp. 186-197.
- Regression-based algorithms for life insurance contracts with surrender guarantees (with A.R. Bacinello and P. Millossovich), *Quantitative Finance*, 2010, vol. 10, pp. 1077-1090.
- Stochastic mortality under measure changes (with M. Denuit and P. Devolder), *Scandinavian Actuarial Journal*, 2010, vol. 2010, pp. 284-311.
- Pricing life insurance contracts with early exercise features (with A.R. Bacinello, E. Biffis and P. Millossovich), *Journal of Computational and Applied Mathematics*, 2009, vol. 233(1), pp. 27-35.
- Modelling extreme market events (with R. Frankland, A.D. Smith, T. Wilkins, E. Varnell, A. Holtham, S. Ethun, D. Dullaway), *The British Actuarial Journal*, 2009, vol. 15(I), pp. 99-217.
- Fair value of insurance liabilities (with P. Millossovich), *Encyclopedia of Quantitative Risk Assessment*, 2008, John Wiley & Sons, New York.
- Pricing of life insurance liabilities, *Encyclopedia of Quantitative Risk Assessment*, 2008, John Wiley & Sons, New York.
- A bidimensional approach to mortality risk (with P. Millossovich), *Decisions in Economics & Finance*, 2006, vol. 29(2), pp. 71-94.
- Lee-Carter goes risk-neutral: An application to the Italian annuity market (with M. Denuit), *Giornale dell'Istituto Italiano degli Attuari*, 2006, vol. LXIX, pp. 1-21.
- The fair value of guaranteed annuity options (with P. Millossovich), *Scandinavian Actuarial Journal*, 2006, vol. 2006(1), pp. 23-41.
- Affine processes for dynamic mortality and actuarial valuations, *Insurance: Mathematics & Economics*, 2005, vol. 37(3), pp. 443-468.
- Demographic risks in pension schemes with combined benefits (with A. Olivieri), *Giornale dell'Istituto Italiano degli Attuari*, 2002, vol. LXV, pp. 137-174.

Talks and Seminars

2013: EGRIE 2013 Conference, Paris; OTC Derivatives Conference, Paris; Risk Pricing in Financial Engineering, Shanghai; German Actuarial Association Scientific Day 2013; Pension Research Council Symposium, Wharton School; Global Derivatives 2013, Amsterdam; Risk Minds Insurance 2013, Amsterdam. 2012: DAA-Young Mathematicians Workshop, Reisensburg Castle; AFI Financial Engineering Summer School, Madrid; University of Bologna; Collegio Carlo Alberto, Turin; Milan Politecnico; NBER Insurance Markets and Catastrophe Risk Conference, Cambridge, MA; University of Hanover/Talanx; Global Derivatives 2012, Barcelona; Georgia State University; Queen's University, Belfast; Risk Minds Insurance 2012, Geneva. 2011: University of Copenhagen (maths); University of Bonn (econ); Georgia State University (CEAR); University of Ulm; ISFA, Lyon; Talanx, Hanover; AXA Longevity and Pension Funds Conference, Paris. 2010: Chinese University of Hong Kong (statistics); Australian School of Business, UNSW, Sidney; Summer School in Risk Management and Control, Rome; DAG-Stat 2010 (Risk Analysis section), Dortmund; Cass Business School; Munich School of Management, LMU Munich; Recanati School of Business, Tel Aviv University. 2009: CESIF-Rome Tor Vergata (econ); Australian School of Business, UNSW, Sidney; Risk and Stochastics Day, LSE, London; ISEG, TU Lisbon. 2008: 2008 Conference in Actuarial Science and Finance, Samos; International workshop on Gerber-Shiu Functions, Linz; Bachelier Finance Society World Congress (longevity risk session), London; Swiss Banking Institute, Zurich; University of Modena and Reggio Emilia (econ); University of Copenhagen (maths). 2007: International Workshop on Insurance Risk Theory, Chern Institute of Mathematics, Tianjin; Heriot-Watt University, Edinburgh;

Bocconi University, Milan; Tanaka Business School, Imperial College London; LSE (statistics), London; University of Trieste (applied maths); Nankai University (mathematics), Tianjin. 2006: UCL (statistics, actuarial science), Louvain-la-Neuve; Italian Institute of Actuaries, Rome. 2005: CeRP, Collegio Carlo Alberto; University of Turin (statistics and applied maths). 2004: Institute for Quantitative Methods, Bocconi University, Milan. 2003: Department of Mathematics, ETH, Zurich.

Teaching Experience

- Imperial College Business School: Life insurance economics, Life insurance finance, Risk management, Advanced investments (postgraduate); risk management (MBA, exec-ed); options trading (exec-ed). Oct07-present
- Cass Business School (postgraduate): Risk management and control, Theory of risk and insurance markets, Financial risk management. Sep05-Dec07
- K.U. Leuven (postgraduate, exec-ed): Market-consistent valuation for life insurance and pensions. Mar08
- Bocconi University: Financial calculus (undergraduate), Market-consistent valuation for life insurance and pensions (postgraduate). Sep04-Jan05, Mar07
- MIB School of Management (exec-ed), Trieste: Asset-liability management. Nov03
- University of Trieste (undergraduate): Risk theory, Actuarial mathematics. Oct03
- Collegio Carlo Alberto, Turin (postgraduate): Introduction to the longevity risk market, Mathematics for insurance. Dec02-Dec05, Jun12-13.
- SDA Bocconi, Milan (exec-ed): Life insurance. Jun01-Sep01

Other Relevant Information

- External PhD committees: Tim Boonen (Tilburg), Helena Aro (Aalto), Jan Windemann (LMU Munich), Craig Blackburn (Australian School of Business, UNSW Sydney), Espen Masotti-Kryeger (Copenhagen), Ralf Stevens (Tilburg).
- PhD students supervision: Davide Benedetti, Elaine Shi, Ariel Sun, Daren Wei, Stephen Zhang, Caterina Lepore, Lorenzo Pitotti (now at Credit Suisse). Co-supervision: James Grant, Farouk Jivraj (now at Morgan Stanley), Athos Brogi (now at Unicredit).
- Member of American Risk and Insurance Association, Econometric Society, European Group of Risk and Insurance Economists, Risk Theory Society.
- Coordinator (with Dr Simon Buckle) of Imperial's response to DECC for comments on the IPCC special report on "Managing the risks of extreme events and disasters to advance climate change adaptation".
- Referee for academic journals: *Applied Mathematics and Computation*, *ASTIN Bulletin*, *Decisions in Economics and Finance*, *European Actuarial Journal*, *Finance and Stochastics*, *Geneva Insurance Review*, *Geneva Papers on Risk and Insurance*, *Insurance: Mathematics and Economics*, *Journal of Computational and Applied Mathematics*, *Journal of Economic Dynamics and Control*, *Journal of Optimization Theory and Applications*, *Journal of Pension Economics & Finance*, *Journal of Risk & Insurance*, *Journal of Risk & Uncertainty*, *Mathematical Finance*, *Mathematical Method in Operations Research*, *Mathematics and Computers in Simulation*, *Mathematics and Financial Economics*, *Methodology and Computing in Applied Probability*, *North American Actuarial Journal*, *Quantitative Finance*, *Risk Analysis*, *Scandinavian Actuarial Journal*, *SIAM Journal on Financial Mathematics*.
- Referee for publishers: *Blackwell Publishing*, *Chapman-Hall John Wiley & Sons*, *Pearson*, *Risk Books*, *Springer*.
- Referee for funding bodies: *Mathematics of Information Technology and Complex Systems*; *Natural Sciences and Engineering Research Council of Canada*; *AXA Research Fund*.
- External reviewer for MSc in Risk and Stochastics (London School of Economics) and MSc in Risk Management (Nottingham Business School).
- Qualified actuary, National Order of Actuaries, Jun06-present (in the process of converting to UK qualification).

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FIRMA DEL DICHIARANTE............................