Curriculum

EDUCATION

[2004] Ph.D. in Mathematics, with emphasis in Finance, University of Rome “Tor Vergata”, Italy. Defended on February, 19th 2004. Advisor: Prof. R. Natalini.
[1999] Graduated in Mathematics, summa cum laude, University of Rome TRE, Italy. Advisor: Prof. R. Natalini.

PROFESSIONAL EXPERIENCE

[since 07/2010] Appointed Associate Professor of Mathematics and Financial Mathematics.

[since 09/2008] Assistant Professor of Mathematics and Financial Mathematics at the School of Engineering, UCBM, Rome (Italy).

[3/2005-8/2008] Assistant Professor in Mathematics and Financial Mathematics in the Department of Economics, University of Varese (Italy).

[1/2005-2/2005] Research grant – Luiss University, Department of Economics, Rome, Italy.
Research topic: Risk Management and Decision Optimization Systems.

[2003-2004] Research grant – IAC-CNR (Institute for Applied Computing – Research National Council) and
Treasury Dept. of the Ministry of Economic and Finance.
Research unit: Portfolio Optimization and Term-Structure Models for the Public Debt Management. Analysis of Optimal Strategies for the Issuances of Public Debt Securities.

[2002-2003] Teaching Assistant in Probability and PDEs at the University of Texas at Austin.

[2000-2002] Research grant – IAC-CNR.
Research topic: Design and Implementation of Effective Approximation Methods for Pricing Equations Arising in Mathematical Finance.

[1999-2000] Research grant – IAC-CNR and INA S.p.A. Capital Markets Department.
Research topic: Asset-Liability Management for Insurance Companies.

RESEARCH PROJECTS

[2007-2010] Programme coordinator of the project “Advanced Mathematical Methods for Finance”, promoted by the European Science Foundation.

[2006-2008] Participation to the research project “Optimality conditions, critical points and numerical methods in vector optimizazion”, financed by the University of Varese (FAR).
Coordinator: Prof. A. Guerreggio, Faculty of Economics.

[2006-2008] Participation to the PREMIA consortium, carried out at INRIA and CERMICS, for the devel-
opment of e

cient numerical schemes for pricing multi-dimensional options.

[2004-2006] Participation to the research project PRIN on Mathematical, Economic and Statistical Sciences.
Coordinator: Prof. W. Runggaldier, University of Padova.

[2003-2004] Cofin. (MIUR), Economic and Statistical Sciences. Coordinator: Prof. F. Gozzi, Luiss University, Rome, Italy.

[2003-2004] “Optimal strategies for the public debt management” (G.N.A.M.P.A.). Coordinator: Dr. B. Piccoli, Research Director IAC-CNR.

[2002-2003] “Distributional properties of stochastic control processes and their applications to portfolio op-
timization” (G.N.A.M.P.A.). Coordinator: Dr. B. Piccoli, Research Director IAC-CNR.

SCHOLARSHIPS AND AWARDS

[2004] Winner of the competition for a 4 years grant for post-graduate education supported by the Department of Economics, Luiss University, Rome, Italy.

[2006] Winner of the competition for a 3 years full time position as Assistant Professor in Economics and Business at Luiss University, Rome, Italy.

[1997-1999] Grant of the University of Roma TRE, as teaching assistant at the Department of Mathematics.

TEACHING

[2009-2011] Lecture course in Mathematical Methods, School of Engineering, UCBM, Rome.
[2009-2011] Lecture course in Mathematics for Economics, Faculty of Economics, Luiss University, Rome.
[2005-2011] Lecture course in Mathematical Analysis, School of Engineering, UCBM, Rome.
[2008-2009] Lecture course in Quantitative Methods in Business, MSc in Business Administration, Faculty of Economics, University of Rome “Tor Vergata”.
[2008-2009] Lecture course in Mathematics 2, Advanced Calculus in Economics and Finance, Faculty of Economics, Luiss University, Rome.

[2008-2009] Lecture course in Mathematics for Economics, Faculty of Economics, Luiss University, Rome.
[2005-2008] Lecture course in Mathematical Finance, Faculty of Economics, University of Varese, Italy.
[2006-2008] Lecture course in Mathematics for Economics, Faculty of Economics, University of Varese, Italy.
[2005-2006] Lecture course in Financial Engineering Models II, Faculty of Engineering, University of Rome
"Tor Vergata", Italy.
[2004-2005] Lecture course in Financial Engineering Models I, Faculty of Engineering, University of Rome
"Tor Vergata", Italy.
[2004-2006] Tutorial for the course in Mathematical Portfolio Theory, Faculty of Economics, Luiss University,
Rome, Italy.
[2003-2005] Tutorial for the course in Mathematical Models of Financial Markets, Department of Mathematics, University of Rome TRE, Italy.
[2004-2005] Tutorial for the course in Advanced Calculus, Faculty of Statistics, University of Rome "La Sapienza", Italy.
[2003-2004] Lecture course in Mathematical Methods for Economics, Faculty of Economics, University of Rome "La Sapienza", Italy.
[2002-2003] TA for the courses in Probability and Partial Di erential Equations and Applications, University
of Texas at Austin.
[2001-2002] Lecture course in Advanced Mathematical Analysis, Faculty of Engineering, University of Rome "La Sapienza", Italy.
[1997-1999] Tutorial for the course in Basic Calculus, University of Rome TRE, Italy.

SEMINARS AND TALKS

- September 10, 2010. "Regularity of Singular Risk-Neutral Valuation Equations", talk at
Kolmogorov Equations in Physics and Finance, Modena (Italy).
- May 6, 2010. "Regularity for Singular Risk-Neutral Valuation Equations", talk at the 5th General
Amamef Conference, Bled (Slovenia).
- May 8, 2009. "Singular Valuation Equations in Finance}", talk at the 4th General Amamef Conference, Centre of Mathematics for Applications of Oslo, Alesund, Norway.
- May 9, 2008. "Existence and uniqueness of solutions for some degenerate valuation equations
and applications", talk at the 3rd General Amamef Conference, University of Pitesti,

Romania.
- January 24, 2008. “A PDE-based Approach for Pricing Mortgage-backed Securities”, talk at the
IX Workshop on Quantitative Finance, University of Rome “Tor Vergata”, Italy.
- December 6, 2007. “Prepayment and Credit Risk Models in the Valuation of Mortgage-Backed
Contracts”, Institute of Applied Mathematics and Information Technology (CNR), Milan, Italy.
- September 18, 2007. “Credit Risk Modeling and Valuation”, seminar lecture at the Joint Research
Centre, Ispra, Italy.
- September 12, 2007. “Continuous-time Financial Markets”, seminar lecture at the Joint Research Centre, Ispra, Italy.
- July 11, 2007. “A Dynamic Interaction Model for In
ation, ECB and Short-term Interest Rates”,
talk at the 22nd European Conference on Operational Research, special session on Financial Optimization and Risk Management in Public Dept Analysis, University of Economics, Prague.
- February 16, 2007. “Finite Differences Approximations for Multidimensional Models of Pricing”, seminar at Cermics (ENPC), Marne-la-Valle e, Paris (France).
- November 22, 2006. “Optimal Debt Securities Strategy and Simulation Framework”, seminar at
Economics and Business Department, University Luiss Guido Carli, Rome, Italy.
- February 2, 2006. “Scenario-Generation Methods for Public Debt Management”, talk at the Amamef conference on Numerical Methods in Finance, INRIA, Rocquencourt (France).
- June 6, 2005. “Design and Estimation of Term Structure Models: An Introduction”, seminar
at the Master in Scientific Calculus, Department of Mathematics, University of Rome “La
Sapienza”, Italy.
- May 23, 2005. “Term Structure Dynamics of Interest Rates by Exponential-A

ne Models",
seminar at the Master in Scientific Calculus, Department of Mathematics, University of Rome
"La Sapienza", Italy.
- November 18, 2004. "A Quadratic Gradient Equation for pricing Mortgage-Backed Securities",
talk at the workshop on PDEs and Finance, University Marne-la-Vallee, Paris (France).
- October 27-30, 2004. "Scenario-Generation Methods for an Optimal Public Debt Strategy", talk at the workshop on Advanced Mathematical Methods for Finance, Technische Universitaet Muenchen, Munich (Germany).
- October 2, 2003. "An ALM Model for Insurance Companies", seminar at Piz2@iac, Institute for Applied Computing, Rome, Italy.
- October 13, 2003. "Optimal ALM with Constraints: A Dynamic Programming Approach", seminar at the Department of Economics, University of Varese, Italy.
- June 3, 2003. "Optimal Asset Liability Management with Stochastic Programming", University of Rome "Tor Vergata", Italy.
- November 29, 2001. "Optimal ALM for Insurance Companies", seminar at the Department of Pure and Applied Mathematics, University of Padova, Italy.
- "The Valuation of Mortgage-Backed Securities: a Differential Model", talk at the workshop on Viscosity Solutions and Applications, Brixen, Italy, 2000.
- "A Portfolio Optimization Problem for an Insurance Company", talk at the 5th SIMAI conference, 2000, Ischia, Italy.
- "Pricing a Mortgage-Backed Security", talk at the 5th SIMAI conference, 2000, Ischia, Italy.

Pubblicazioni principali (ultimi 10 anni)

A Model for the Optimal Asset-Liability Management for Insurance Companies", with M. Bernaschi,
M. Briani, F. Gozzi, S. Sbaraglia, `International Journal of Theoretical and Applied Finance',
Vol. 6, No. 3, 2003. ISSN: 0219-0249.

- "A Generalized Osgood Condition for Viscosity Solutions to Fully Nonlinear Parabolic Degene-
rate Equations", `Advances in Di erential Equations', Vol. 7, No.9, 2002. ISSN 1079-9389.

- "Regularity results for a class of Semilinear Parabolic Equations and Applications", `Communi-
cations in Mathematical Sciences', Vol. 1, No. 2, 2003. ISSN: 1539-6746.

- "Lipschitzian Estimates in Discrete-Time Constrained Optimal Control", with S. Sbaraglia, `Dy-
namics of Continuous, Discrete and Impulsive Systems', Series A: Mathematical

Analysis, Vol.
13, No. 1, 2006. ISSN: 1201-3390.

- “Optimal Asset-Liability Management with Constraints: A Dynamic Programming Approach”,
with S. Sbaraglia, `Applied Mathematics and Computation’, Vol. 173, No. 1, 2006. ISSN:
0096-3003.

- “Regularity Properties of Constrained Set-Valued Mappings”, `Nonlinear Analysis: Theory, Meth-
ods & Applications’, Vol. 54, No. 7, 2003. ISSN: 0362-546X.

- “On the Domain of the Implicit Function and Applications”, `Journal of Inequalities and Appli-
cations’, Vol. 3, 2005. ISSN: 1025-5834.

- “Scenario-Generation Methods for an Optimal Public Debt Strategy”, with M. Bernaschi, M.
Briani, D. Vergni, `Quantitative Finance’, Vol. 7, No. 2, 2007. ISSN: 1469-7688.

- “A PDE-Based Approach for Pricing Mortgage-Backed Securities”, with M. Briani, Report
IAC-CNR n.75 6/2005, publication on the AMAMEF Book, Springer Ed., 2010.

- “Singular Valuation Equations in Finance”, with C. Costantini and F. D’Ippoliti, 2010, accepted for publication on Finance and Stochastics.