Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

<div style="border:1px solid">

**SCIENTIFIC AND PROFESSIONAL CURRICULUM**

</div>

References
- Michael A.H. Dempster, Emeritus Professor of mathematical finance, University of Cambridge (UK), mahd2@cam.ac.uk
- William T. Ziemba, Emeritus Professor of finance, University of British Columbia (CA), wtzimi@mac.com or William.ziemba@gmail.com
- Rita Laura D'Ecclesia, Professor of applied mathematics, University of Rome La Sapienza (IT), rita.decclesia@uniroma1.it

**My ORCID**: orcid.org/0000-0002-7718-347X

## A. SCIENTIFIC COMMUNITIES, MEMBERSHIP AND GOVERNANCE

- Bachelier Finance Society (BFS) https://www.bachelierfinance.org/, membership
- Euro Working Group for Commodities and Financial Modelling (EWGCFM), management board and membership, https://www.euro-online.org/web/ewg/8/ewg-cfm-euro-working-group-on-commodities-and-financial-modelling
- Euro Working Group on Stochastic Optimization (EWGSO), membership, previously in the management board until 2018, https://www.euro-online.org/web/ewg/35/euro-working-group-on-stochastic-optimization
- Fellow of the Institute of Mathematics and its Applications (FIMA, UK)
- Italian Association of Applied Mathematics to Economic and Social Sciences (AMASES, IT), membership www.amases.org
- Italian Association of Operations Research (AIRO, IT), membership and founder of the Stochastic Programming technical section http://www.airo.org/index.php/it/attivita/sezioni-tematiche/programmazione-stocastica
- Associate of the Research Center Ezio Tarantelli for Interuniversiary Studies (CIRET)
- Stochastic Programming Society (SPS, Technical session of the Mathematical Optimization Society), membership https://stoprog.org/. Elective member of the scientific board between 2007 and 2013.

## B. ACADEMIC AND PROFESSIONAL CV AND STUDIES

### B1. Grades, Institutional and academic appointments

25.7.2020     Ministry of Science and Higher Education of Poland, National Science Center, OPUS grant applications. Appointed Foreign NCN Academic Expert for National Research Grant applications in the HS4 stream on Individuals, Institutions and Markets.
Reviewer of 14 Grant applications.

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

| | |
|---|---|
| 8.5.2020 | Aalto University (Finland), School of Business appointed external examiner and Opponent in PhD defense by Nasim D Hardoroudi (Supervisor Prof. M.Kallio): *Advances in Portfolio Theory*. |
| 23.1.2020 | Cass Business School (London, UK), Faculty of Actuarial Science and Insurance, appointed external examiner and Opponent in PhD defense by Chul Jang (Supervisor Prof. I. Owadally): *Lifetime Investment and Annuitization decisions using Multistage Stochastic Programming.* |
| 8.1.2020 | Linkoping University (Linkoping, SVE), Department of Management and Engineering, Division of Production Economics, appointed external examiner and Opponent in PhD defense by Johan Hagenbjork (Supervisor Prof. J. Blomvall): *Optimization-Based Models for Measuring and Hedging Risk in Fixed Income Markets.* |
| 15.2.2016 | Elective member of the EWG on Stochastic Programming -- Management Board and Treasurer (2nd mandate, until December 2018) |
| October 2014 | Babson College (Wellesley, MA, USA), Division of Mathematics and Science. Invited External Reviewer of the Commission for advancement to Full Professorship of Associate Professor Dessislava Pachamanova. |
| March 2014 | Korean Advanced Institute of Technology (KAIST, South Korea), Dept of Industrial and Systems Engineering, Invited External Reviewer of the Commission for Associate Professorship of Dr. Woochang Kim. |
| 5.2.2014 | Habilitation to full professorship in the area of Applied Mathematics for Economics, Actuarial and Financial sciences. SECS/S06 Italian academic scientific code, 13-D4 scientific area |
| 1.11.2013 | Appointed by the Rector to the (7-members) Executive Board of the University of Bergamo PhD school (until Mach 2016) |
| 05.09.2012 | Founder and elective Coordinator of the Italian Operations Research Stochastic Programming section http://www.airo.org/sezioni-tematiche/20-sezione-airo-healthcare/168-prog-stocastica.html (in charge until September 2018) |
| 27.11.2011 | Research Fellow of the Institute of Mathematics and its Applications (FIMA, UK) |
| 27.8.2007 | Elective Member of the International Committee on stochastic programming (COSP), www.stoprog.org (then re-elected in 2010 for a second mandate until 2013). |
| 23.3.2004 | Associate Professor in Mathematical methods in Economics, Actuarial and Financial Sciences -- SECS/S06 Italian academic scientific code |
| 16.3.2001 | Senior Research Associate of the Judge Institute of Management Studies, University of Cambridge (U.K.) |
| 1.1.1996 | Post-Doctoral Research Fellow at the Centre for Financial Research University of Cambridge (U.K.) |
| 26.3.1998 | Doctor of Philosophy in Mathematics -- University of Essex (U.K.) |
| 2.10.1990 | Diploma in Banking and Finance – University La Sapienza of Rome |
| 30.1.1984 | Honors degree in Economics – University La Sapienza of Rome |

## B2: Academic and professional carrier

| | |
|---|---|
| *Oct.2005—current* | **University of Bergamo** Full time Associate Professor, Department of Management, Economics and Quantitative methods, scientific sector SECS/S06, Comp Sec 13-D4 |
| *June 2016-May2018* | **Scientific Advisor of Allianz Investment Management (GER)** on strategic planning and internal models for institutional and individual asset-liability management and risk capital allocation. Compatible with full time academic position at UniBG. |
| *Mar.2006—June.2010* | **FinMonitor, Research Centre on Merger and Acquisitions in the financial sector** of the University of Bergamo, Director |
| *Jan.2002-Sept.2005* | **Consultant for quantitative developments in the finance sector** See below section K and subjects therein, on my professional consulting activity during this period. |
| *Mar.2000-Dec.2001* | **UniCredit Banca Mobiliare** Investment Bank of UniCredito Italiano, Vice President |
| *Jan.1998-Feb.2000* | **UniCredito Italiano** Staff of the CFO, Vice Director in the Finance dept. |
| *Jan.1995-Dec.1997* | **University of Cambridge –** Cambridge (U.K.) |

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

|  | *Judge Institute of Management Studies, Centre for Financial Research* -- Post-Doctoral Research Fellow |
|---|---|
| *Feb.1986/Apr.1992* | **Societa' Immobiliare e Finanziaria p.a. – SIFA**, IRI Group*. Rome. Finance Directorate, Officer since 1990. Previously in the trading floor. |
| *Jan.1984/Jul.1984* | **European Community – DGVII** – Brussels. Scholarship with the Division on control and intervention policies in the Energy market |

From October 1984 to January 1986, military service as Lieutenent in the Army of Carabineers

## B3: Studies

| *a.y. 1993-4/1996-7* | **University of Essex** (U.K.), **PhD in Mathematics** Supervisor: Professor M.A.H. Dempster Dissertation: *Dynamic Stochastic Programming for Asset and Liability Management.* |
|---|---|
| *Jan.1990-Jun.1990* | **University of Rome La Sapienza, Diploma**: Postgraduate program in Banking, Director Prof. Mure', Faculty of Economics |
| *a.y.1978-9/1982-3* | **University of Rome La Sapienza – Faculty of Economics** Honors degree in Economics, Supervisor: Prof. Guido Rey |

---

## C. INSTITUTIONAL POSITIONS AND GOVERNANCE AT UNIBG – SUPERVISION OF ADVANCED TRAINING GRANTS AND TEACHING

From 1/11/2013 until 31/3/2016 member of the Executive Board of the UniBG PhD School for advanced training and doctoral studies.
Since 2013/2014 Member of the PhD program on Analytics for Economics and Business (AEB). Prior to this position I was member of the PhD program in Economics, Applied Mathematics and Operations Research (EAMOR).

### COORDINATION OF ADVANCED TRAINING GRANTS

- **Training and Research Excellence Initiative Cooperation UniBG-GeorgiaTech on Computational Management and Applications: COMPMAPP** (**2015-2017**). Proponent and Coordinator.

Bilateral cooperation funded by the University of Bergamo as part of its excellence and advanced training and research policy to strengthen the cooperation with top foreign academic institutions. The program included two 4-weeks Summer schools on Computational Management at Master level to be held at UniBG, two 1-week Workshops on Applied Optimisation to Finance, Energy, Supply Chain Management, Logistics, Health care at Georgia Tech. Plus a Conference at UniBG and joint research with two Special issues on related topics. Coordinator of the program which involves two UniBG Departments and the Dept of Industrial Engineering ISyE at GTech and the Scheller Business school. Total budget committed: 90.000 Euros.

- **SP4DSS** Cariplo Foundation **2007-2009** project on advanced training in **"Stochastic optimization techniques for decision support systems**". Proponent and Coordinator. Competitive Grant issued by the Cariplo Foundation for research centers and departments located in Lombardia.

Network of 5 European university departments: DMSIA of the University of Bergamo (coordinator), School of Mathematics University of Edinburgh (UK), Department of Mathematics and Carisma Center Brunel University of West London (UK), Department of Statistics and Decisions University of Vienna, Department of Engineering Norwegian University of Technology NTNU (NO). The program included three dedicated schools in 2007, 2008 and 2009 and an extended exchange of students and teaching positions across the five universities relying on 78.000 Euros granted by the Cariplo Foundation and 72.000 Euros by private entities and the involved universities.

### Institutional teaching activity at the University of Bergamo

My academic background is well framed within the community of applied mathematics to economics and finance, with relevant connections to operations research and statistics.
At the undergraduate level my teaching experience is primarily related to financial and insurance mathematics, mathematics and computer science.

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

During the a.y. 2015/2016 my teaching activity has been suspended due to a sabbatical year.

- *PhD level* – PhD in Analytics for Economics and Business:

Long-term Finance: a.y. 2013/2014, 2014/2015, 2016/2017, 2017/2018
Stochastic optimization: a.y. 2013/2014, 2014/2015, 2016/2017, 2017/2018
Introduction to stochastic programming: a.y. 2010/2011, 2011/2012, 2012/2013

- *Postgraduate*—Master in Management, Finance and International Business:

Derivatives and risk management a.y. 2013/2014, 2014/2015
Options theory and structured products: a.y. 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012.
Advanced probability theory and statistics for finance: a.y. 2010/2011, 2011/2012, 2013/2014, 2014/2015, 2016/2017
Portfolio theory: a.y. 2005/2006, 2006/2007, 2007/2008, 2008/2009
Financial Engineering: a.y. 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010

- *Undergraduate courses*:

Financial mathematics (48 hours): a.y. 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
Computer science (48 hours): a.y. 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
Mathematics and Linear Algebra (24 hours): a.y. 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
Statistics for financial markets (24 hours): a.y. 2013/2014

---

## D.    VISITING ACADEMIC POSITIONS

*a.y. 2017-2018*
**University of Turin**, *Collegio Carlo Alberto* (Turin, IT): Long-term finance, *Master in Insurance, Finance and Risk Management*, (6 hours)
*a.y. 2013/2014*
**Jiaotong University** (Xi'an Shaanxi, China). Graduate course: Modern optimization techniques for financial management (20 hours)
*a.y. 2012/2013*
**Cass Business Schoo**l (London, UK) Master of Science in Mathematical trading and finance. Course: Derivatives I (30 hours)
*a.y. 2005/2006—2011/2012.*
**University of Svizzera Italiana** (Lugano, CH), Master in Finance, faculty of Economics, (56 hours): Numerical methods in finance since 2009/2010. Advanced Financial Modeling from 2005/2006 to 2008/2009
*a.y. 2011-2012*
**University of Bologna** (Bologna, IT): Stochastic optimization methods in finance, *Crash course* in the program for Advanced Education, Faculty of mathematics (6 hours)
*a.y. 2011-2012*
**University Rey Juan Carlos** (Madrid, SP)
Master program in Operations Research, Faculty of Engineering (5 hours)
*a.y. 2005/6-2008/9*
**University of Svizzera Italiana** (Lugano, CH): Master in Finance, Faculty of Economics, (56 hours): Financial Intermediation
*a.y. 2007-2008*
**University of Calabria** (Rende, IT): Numerical methods in finance, NEC Master program, faculty of Engineering, (20 hours)
*a.y. 2004-2005*
**University of Bergamo** (Bergamo, IT): Advanced financial mathematics, undergraduate degree, Faculty of Economics, (48 hours)
*a.y. 2002-2003*
**University of Rome La Sapienza** (Rome, IT): *Financial Innovation* Master in Economics and financial markets, Interdepartmental Center on Financial Markets Economics, (6 hours)
**University of Catania** (IT): *Financial Risk Management* as part of the postgraduate course on Decisions theory, Faculty of Economics (20 hours)

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

**Erasmus University** (Rotterdam, NL): *Derivatives and Risk management: Models, Tools & Software II -*
*-* Master in Financial Management of the Rotterdam School of Management (18 hours)
*a.y. 2001-2002*
**University of Catania** (Catania, IT): *Portfolio theory*, Faculty of Economics, undergraduate program in
Economics  (20 hours)
**University of Milan Bicocca** (Milan, IT): *Credit Risk Analysis*  Master in Finance and Risk Management
– FINARM – Faculty of Economics  (8 hours)
*a.y. 1998-1999*
**University of Milan Bicocca** (Milan, IT): *Pricing and portfolio risk management* postgraduate program
in Statistical methods, Faculty of Informatics and computer science   (12 hours)
*a.y.1997/1998*
**University of Milan Bicocca** (Milan, IT): *Derivative markets and portfolio selection,*  Master program in
Computer based statistics Department of Computer Sciences, Faculty of Informatics and computer
science   (12 hours)
*a.y. 1996/1997*
**University of West London Brunel** (London, UK): *Financial Engineering*  Master of Science in
Finance, London (32 hours)
*a.y. 1991/1992*
**University of Rome La Sapienza** (Roma, IT): *Emerging countries debt and secondary market,*
postgraduate program, Department of Quantitative methods in the Faculty of Political sciences (20
hours)
*a.a. 1990/1991*
**University of Rome La Sapienza** (Roma, IT): *Emerging countries debt and secondary market,*
postgraduate program in "International finance" directed by Professor G.Puoti, Department of
Quantitative methods in the Faculty of Political sciences (20 hours)

---

## E.       EDITORIAL BOARDS

Associate Editor of:
(1) *Computational Management Science*  (I.F. 1.69, Springer) indexed by SCImago,
SCOPUS, EconLit and others less relevant.
(2) *IMA Journal of Management Mathematics* (I.F. 1.529, Oxford University Press), indexed
by Science Citation Index®, Zentralblatt Math and others.
(3) *International Journal of Financial Engineering and Risk Management* (Inderscience)
indexed by EconLit and others.
(4) *OR Spectrum* (I.F. 1.274, Springer) indexed by indexed by SCImago, SCOPUS, EconLit,
zbMath and others.

Guest Editor (see below) of *Quantitative Finance* (Taylor and Francis), *Annals of Operations Research*
(Springer).

---

## F.       Publications

Google Scholar:



| Author | Documents | h-index ⓘ | Affiliation | City | Country/Territory |
|---|---|---|---|---|---|
| 1  Consigli, Giorgio | 31 | 8 | Università degli Studi di Bergamo | Bergamo | Italy |

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

Over the years my research activity and publications led me to consolidate the collaboration as referee with several Journals and publishers for monographs mainly in finance. The journals, by relevance of the collaboration degree, are: *European Journal of Operational Research*, *IMA Journal of Management Mathematics, Computational Management Science, Annals of Operations Research, Quantitative Finance, Optimization Letters, Journal of Banking and Finance* in particular. While long-term collaboration for textbooks and chapters with Springer, Taylor and Francis, Elsevier Science -- North-Holland. I am a Springer author in constant cooperation with the Publisher (prof. Camille Price and dr. Matthew Amboy).

## - *EDITORIAL WORK*

E1. G.Consigli, D.Dentcheva e F.Maggioni Eds (2020): Stochastic Optimization: theory and applications, Special Issue *Annals of Operations Research*, Springer (US).

E2. G. Consigli and A.Kleywegt Eds (2019): Data-driven optimization in management, Featured Cluster of *Computational Management Science Journal,* Springer (EU)

E3. G.Consigli, S.Stefani and G.Zambruno Eds (2017): *Recent Advances in commodity and financial modelling*, Sub-title: Quantitative methods in Banking, Finance, Insurance, Energy and Commodity markets, International Series in Operations Research and Management Science (Springer).

E4. G.Consigli, D.Kuhn and P.Brandimarte Eds (2016): *Optimal Financial Decision Making under Uncertainty*, International Series in Operations Research and Management Science (Springer, US).

E5. G.Consigli and Y.Smeers Eds (2016): Special Issue on Stochastic Optimization Approaches to Energy and Financial Markets, *Quantitative Finance* 16 (2)**,** Taylor and Francis (UK)

E6. G.Consigli, P.Brandimarte and D.Kuhn Eds (July 2015): Financial Optimization. Sub-title: optimization paradigms and financial planning under uncertainty, *OR SPECTRUM*, 37 (3), Springer

E7. G.Consigli, V.Moriggia and G.Ch Pflug Eds (2012): Applied Stochastic Optimization, *IMA Journal of Management Mathematics* (O.U.P.)

E8. M.Bertocchi, G.Consigli and M.A.H.Dempster Eds (2011): Handbook on Stochastic Optimization Methods in Finance and Energy. New financial products and energy market strategies. *Fred Hillier International Series in Operations Research and Management Science*, Springer (U.S.)

E9. G.Consigli, V.Moriggia and G.Ch Pflug Eds (2010): Applied Optimization techniques for Industry, *IMA Journal of Management Mathematics* 21 (O.U.P.)

## - *JOURNAL ARTICLES,* in progress, close to submission or submitted.

1) G.Consigli, J.Liu, Z.Chen: Interval-based stochastic dominance: theoretical framework and application to portfolio choices. Submitted to *Annals of Operations Research*
2) G.Consigli, F.Maggioni, D.Lauria: Optimal chance-constrained pension fund management through dynamic stochastic control. Submitted to *OR Spectrum*
3) G.Consigli, A.Pichler, M.Kopa: Advances in stochastic optimization in finance. Invited Review article by the *European Journal of Operational Research*. To be submitted by October 2020.
4) B.Ji, Z.Yan, Z.Chen and G.Consigli: Optimal long-term management of the Chinese Urban Pension System through a combined stochastic programming and optimal control approach. To be submitted to *Quantitative Finance*.
5) D.Barro, G.Consigli and V.Varun: A stochastic programming model for optimal risk control with financial derivatives. To be submitted to *Journal of Banking & Finance*, by October 2020.
6) G.Consigli, R.Gao, A.Hitaj and A.Kleywegt: Distributionally robust liability-driven pension fund management. In progress, likely to be submitted by November 2020.

## - *JOURNAL ARTICLES:*

J1. G.Consigli, V. Moriggia and S.Vitali (2019): Long-term individual financial planning under stochastic dominance constraints. *Annals of Operations Research* (Springer) S.I. on Stochastic Optimization: Theory and Applications. Online First May 2019, 1—31

J2. Z.Yan, Z.Chen, G.Consigli, J.Liu, M.Jin (2019): A copula-based scenario tree generation algorithm for multiperiod portfolio selection problems. *Annals of Operations Research* (Springer) S.I. on Stochastic Optimization: Theory and Applications. Online First January 2019, 1—33

J3. G.Consigli, A.Hitaj and E.Mastrogiacomo (2019): Portfolio choice under cumulative prospect theory: sensitivity analysis and an empirical study. Journal of *Computational Management Science* 16(1) (Springer), 129—154

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

J4. G.Consigli, V. Moriggia, L.Mercuri and S.Vitali (2018): Optimal insurance portfolios risk-adjusted performance through dynamic stochastic programming. S.I. in honor of Maarten van der Vlerk, Journal of *Computational Management Science* 15(3), (Springer), 599—632

J5. D.Barro, E.Canestrelli and G.Consigli (2018): Volatility versus downside risk: performance protection in dynamic portfolio strategies. To appear in the S.I. on Data driven Optimization in Management Science, Consigli and Kleywegt Eds., Journal of *Computational Management Science* (Springer). Online First May 2018, 1—47

J6. G.Consigli and M. di Tria (2018): Asset-liability management and goal-based investing for Retail business. S.I. on Application of Optimization in Finance, Ho Lee and Kim Eds., *International Journal on Financial Engineering and Risk Management* 2(4) Inderscience, 308—334

J7. Ntamjokouen A, S. Haberman and G. Consigli, (2017): Projecting the long-run relationship of multi-population life expectancy by race. *Journal of Statistical and Econometric Methods* 6(2) Sciencepress Ltd, 43—68

J8. G.Consigli, P.Brandimarte and D.Kuhn (2015): Optimization paradigms and financial planning under uncertainty, *OR SPECTRUM*, 37 (3), Springer, 2-11

J9. Ntamjokouen A, S. Haberman and G. Consigli, (2014): Modeling multi-population life expectancy: A cointegration approach', Vol 2– *Insurance Markets and Companies: Analyses and Actuarial Computations*, Business Perspectives Pbl (UKR), 12-23

J10. G.Consigli and V.Moriggia (2014): Applying stochastic programming to insurance portfolios stress-testing. *Quantitative Finance Letters* 2:1, 7—13

J11. G.Consigli, M.di Tria, G.Iaquinta, D.Musitelli and V.Moriggia (2012): Retirement planning in individual asset-liability management. *IMA Journal of Management Mathematics* (OUP, UK), doi 10.093, dps019, 365—396

J12. P.Beraldi, G.Consigli, F.De Simone, G.Iaquinta and A.Violi (2012): Scenario-based dynamic corporate bond portfolio management. *IMA Journal of Management Mathematics* (OUP, UK), doi:1093, dps017, 1--24

J13. G.Consigli, G.Iaquinta and V.Moriggia (2012): Path-dependent scenario trees for multistage stochastic programs in finance. *Quantitative Finance* 12(8), 1265-1281

J14. G.Consigli, M. di Tria, G.Iaquinta and V.Moriggia (2011): Optimal management of life insurance household portfolios in the long run. *Pacific Journal of Optimization,* Special Issue on Applications in stochastic programming, Z.Chen Ed. vol.7.2.2011, 197—219

J15. L.M.MacLean, G.Consigli, Y. Zhao and W.T.Ziemba (2010): Risk Indicators in Equity markets. *Mathematical Methods in Economics and Finance,* 2008. 3 (2), 101—118

J16. G.Consigli, L.M.MacLean, Y. Zhao and W.T.Ziemba (2009): The Bond-Stock Yield Differential as a Risk Indicator in Financial markets. *The Journal of Risk* 11(3), 1—22

J17. K.Berge, G.Consigli and W.T.Ziemba (2008): The Predictive Ability of the bond-stock earnings yield differential in relation to the Equity risk premium, *The Journal of Portfolio Management* 34.3, 63—80

J18. J.Abaffy, M.Bertocchi, J.Dupacova, V.Moriggia and G.Consigli (2007): Pricing non diversifiable credit risk in the corporate Eurobond market. *Journal of Banking and Finance* 31, 2233—226

J19. R.Giacometti, S.Rachev, A.Chernobai, M.Bertocchi, and G.Consigli (2007): Heavy-tailed distributional model for operational losses. *The Journal of Operational Risk* 2.1, 55—90

J20. G.Consigli (2002): Tail estimation and mean-VaR portfolio selection in markets subject to financial instability. *Journal of Banking and Finance* 26:7, 1355—1382

J21. J.Dupacova, G.Consigli and S.W.Wallace (2001): Scenarios for multistage stochastic programmes. *Annals of Operations Research* 100, 25—53

J22. G.Consigli and A.Di Cesare (2001): A simulation environment for discontinuous portfolio value processes. *Applied Stochastic Models in Business and Industry,* Vol. 17 Issue 1, Wiley Pbl, 41—55

J23. G.Consigli and M.A.H.Dempster (1998): Dynamic stochastic programming for asset-liability management. *Annals of Operations Research* 81, 131—161

J24. G.Consigli and M.A.H.Dempster (1996): Solving Dynamic Portfolio problems using Stochastic Programming. Special Issue of *Zeitschrift fur Angewandte Mathematik und Mechanik*

## - BOOKS AND BOOK CHAPTERS

B1. G. Consigli, V. Moriggia, E. Benincasa, G. Landoni, F. Petronio, S. Vitali, M.di Tria, M. Skoric and A. Uristani (2017): Optimal multistage defined-benefit pension fund management in *Recent Advances in commodity and financial modelling,* Consigli, Stefani e Zambruno Eds (Springer, U.S.), 267—296

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

B2.    Consigli G., D.Kuhn and P.Brandimarte (2016): Optimal Financial Decision Making in Finance. In *Optimal Financial Decision Making under Uncertainty*, G.Consigli, D.Kuhn and P.Brandimarte Eds (Springer U.S.), 255-289

B3.    Chen Z., G.Consigli, J.Liu, G. Li, T. Fu and Q. Hu (2016): Multiperiod Risk Measures and Dynamic Risk Control. In *Optimal Financial Decision Making under Uncertainty*, G.Consigli, D.Kuhn and P.Brandimarte Eds (Springer U.S.), 1--34

B4.    Ntamjokouen A, Haberman and G Consigli (2014): A multivariate approach to project the long run relationship between mortality indices for Canadian provinces in C Perna and M Sibillo Eds, Mathematical and Statistical Methods for Actuarial Sciences and Finance, Springer, 153--163

B5.    M.Bertocchi, G.Consigli, R.D'Ecclesia, R.Giacometti, V.Moriggia and S.Ortobelli (2013): Eurobonds: markets, infrastructure and trends. World Scientific Series in Finance, vol 7. Author of Chapter 3: Government Bond Markets, Chapter 4: Corporate Bonds and Chapter 7 section 1: the Covered Bond Market.

B6.    V.Moriggia, G.Consigli, and G.Iaquinta (2013): Optimal Stochastic Programming-based Personal Financial Planning with Intermediate and Long-term Goals. *Stochastic Programming: Applications in Finance, Energy, Planning and Logistics*. Gassmann H, Wallace S and Ziemba W.T. Eds. *World Scientific Series in Finance*, 43—68

B7.    G.Consigli and M. di Tria (2012): Optimal long-term Property and Casualty ALM with risk capital control, *Asset-Liability Management for Financial Institutions*, Swarup B. Ed., QFinance Series Bloomsbury Pbl (London), 121—149.

B8.    P.Beraldi, G.Consigli, F.De Simone, G.Iaquinta and A.Violi (2011): Hedging market and credit risk in corporate bond portfolios. *Handbook on Stochastic Optimization Methods in Finance and Energy*. New financial products and energy market strategies, Bertocchi, Consigli and Dempster Eds. *Fred Hillier International Series in Operations Research and Management Science*, Springer, 73—98

B9.    G.Consigli, M. di Tria, M.Gaffo, G.Iaquinta, V.Moriggia and A.Uristani (2011): Dynamic portfolio management for property and casualty insurance. *Handbook on Stochastic Optimization Methods in Finance and Energy*. New financial products and energy market strategies, Bertocchi, Consigli and Dempster Eds. *Fred Hillier International Series in Operations Research and Management Science*, Springer, 99—124

B10.   G.Consigli, G.Iaquinta and V.Moriggia (2008): Scenario generation for credit risk management. In *Bank Capital in risk management and investment strategies*, Moriggia and Torricelli Eds, Esculapio pbl, 57—80

B11.   L.M.MacLean, Y.Zhao, G.Consigli, W.T.Ziemba (2008): Estimating parameters in a pricing model with state dependent shocks. *Handbook of Financial Engineering*, P.M. Pardalos, M.Doumpos and C. Zopounidis (Eds), Springer-Verlag, 231-244

B12.   G.Consigli (2007): Asset-Liability management for Individual Investors. In North-Holland *Handbook on Asset and Liability Management* – Vol B, Eds W.T.Ziemba and S.A.Zenios, North-Holland Finance Handbook Series, 751—826

B13.   G.Consigli (2004): Estimation of Tail risk and portfolio optimisation with respect to extreme measures. In *Risk Measures for the 21st Century,* G.Szego Ed. John Wiley and Sons Pbl, 365—401

B14.   G.Consigli and L.Stanca (1999): Rischio di credito sovrano ed analisi del default risk: Discussione ed aspetti metodologici. Ne *Il Rischio Creditizio: Misura e controllo*, Proff.G.Szego e F.Varetto Eds., UTET Libreria Pbl, 379—406

B15.   G.Consigli and MAH Dempster (1998): The CALM stochastic programming model for dynamic asset-liability management. In *World Wide Asset and Liability modelling.* J.M.Mulvey and W.T.Ziemba Eds. Cambridge University Press, 464—500

B16.   Z.Chen, G.Consigli, M.A.H.Dempster and N.Hicks-Pedron (1997): Towards sequential sampling algorithms for dynamic portfolio management. in *New Operational Tools for the Management of Financial Risk.* K.Zopounidis Ed., Kluwer Academic Publisher, 197—211

**-    *PROFESSIONAL JOURNALS AND SPECIALISED MAGAZINES***

P1.    G.Consigli, M.di Tria, M.Gaffo, S.Boffelli, G.Iaquinta and V.Moriggia (2011): Personal AIM: un'applicazione di ottimizzazione stocastica alla pianificazione finanziaria individuale, *Matematica e Impresa*, Academic-Industry success histories, Sept 2011

P2.    G.Consigli (2008): Instabilità e concorrenza. AZIENDA BANCA, Dossier Banche estere, articolo invitato, Numero (1). Jan-Feb.2008, 40—42

P3.    G.Consigli, E.Benincasa ed E.Bosco (2007): Concentrazione e concorrenza nel sistema bancario italiano: 1995-2005. FinMonitor Research series, www.finmonitor.it, Mar.2006, 1—52

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

P4.     G.Consigli (2005): Corporate analysis and risk premiums. UniCredit Banca Mobiliare Credit Research Series, Special issue n. 9, giorgio.consigli@unibg.it, 1—19

P5.     G.Consigli (2005): Default premiums and credit risk. UniCredit Banca Mobiliare Credit Research Series, Special issue n. 8 , giorgio.consigli@unibg.it, 1—23

P6.     G.Consigli (2005): Leverage, Credit Default Swaps and equity yields: a statistical analysis. UniCredit Banca Mobiliare Credit Research Series, Special issue n. 7, giorgio.consigli@unibg.it, 1—24

P7.     G.Consigli (2004): 5Y Credit Default Swaps and theoretical spread dynamics: from pricing to relative value analysis. UniCredit Banca Mobiliare Credit Research Series, Special issue n. 6, , giorgio.consigli@unibg.it , 1—35  (RM)

P8.     G.Consigli, G.Frascella and G.Sartorelli (2001): Understanding financial markets with estreme value theory: from Value at Risk to Crises correlation analysis. *UniCredit Banca Mobiliare Research Series*, 1—27

P9.     G Consigli (1992): La riforma dei sistemi creditizi nei paesi dell' Europa Centro-Orientale. *Dirigenza Bancaria* 28, 9-16

P10.    G.Consigli (1992): Options e futures: la loro recente evoluzione. *Rivista dei Sistemi Finanziari* 4.1, 32—38

P11.    G.Consigli (1991): La crisi del debito e le sue conseguenze sull'evoluzione dei mercati finanziari internazionali e sulle strategie degli Istituti di Credito all'inizio degli anni '90. *Bollettino Associazioni Nazionale Banche Popolari* 11/12, 1—67

---

## G.     RECENT (2017-2020) RESEARCH PROJECTS AND SCIENTIFIC NETWORK

The following are recent and ongoing research projects that help characterizing my most relevant present interests:

a) **ALM for Institutional investors and for Policy makers**, specifically in the areas of optimal management of occupational pension funds by corporate sponsors and of insurance portfolios, as well as on optimal pension systems funding policy by a policy maker. I have three articles in progress in this area: 1) one in cooperation with Anton Kleywegt from GeorgiaTech and a colleague from University of Milan Bicocca developing a new method for distributionally robust optimisation, 2) a second one completed and close to submission with colleagues from UniBG on stochastic control methods for pension fund management. 3) A third article in cooperation with colleagues from Jiaotong university in Xi'an on optimal pension fund management and pension system sustainability by the Chinese government through a mixed optimal-control multistage stochastic programming approach. This is a relevant research stream of my activity, dating back to my PhD studies.
*Keywords: financial optimization, distributional uncertainty, model risk, ambiguity, dynamic models, strategic asset-liability management, long-term planning, pillar 1 pension system, occupational pension funds, liability pricing, longevity derivatives, solvency regulations, defined benefit pensions, multicriteria decision making, economic and financial factors' statistical modeling.*

b) **INDIVIDUAL ALM, WEALTH MANAGEMENT, GOAL-BASED INVESTING, ROBO-ADVISORY, FINANCIAL ENGINEERING** FOR INDIVIDUALS: this area of interest is developing as the previous thanks to scientific contributions and the involvement of industry colleagues. After two articles in 2018 and 2019, one of which in cooperation w ith Massimo di Tria – Chief Investment Officer of Cattolica Assicurazioni in Italy, we are currently extending the analysis to propose a goal-based-investing model with insurance protection. This is a research field with remarkable and interesting industry developments and potential. This is also the domain in which, mostly due to an aggressive market policy by software companies and data providers, the area of Fintech is penetrating fast: within my advisory commitments for Allianz in 2017 a thorough analysis of this market segment was developed benefiting ongoing internal individual ALM developments.
*Keywords: long-term household planning, life cycle theory, stochastic dominance, goal-based investing, optimal investment-retirement strategies, robo-advisory, risk-attitude.*

c) **DYNAMIC PORTFOLIO MANAGEMENT, VOLATILITY TRADING, RISK CONTROL, STOCHASTIC DOMINANCE**: this is mostly a research stream that I carry on with academic colleagues based on my interest on dynamic investment theory in a discrete setting and optimal risk control based on market signals and derivative contracts. I currently have two research articles in progress in cooperation

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

with a colleague from Univ. Ca' Foscari of Venice and with the colleagues from Jiaotong university. In the first article we extend a canonical multistage dynamic model to include complex derivatives portfolios and strategies with an underlying return model based on stochastic correlations. In the other article, following up from a recently submitted article proposing a new decision paradigm based on a family of stochastic dominance criteria, we are deriving a consistent new portfolio selection approach. Finally with the same colleagues from Jiaotong university we have recently published a paper on dynamic risk control under stochastic volatility and a mixture of copula functions aimed at improving tail control in periods of financial instability.

*Keywords: learning enabled optimization, derivatives-based dynamic portfolios, equity options, derivatives pricing, incomplete markets, partial stochastic dominance, financial contagion, mixed copula functions, mean-absolute-deviation, conditional Value-at-Risk, VIX index, early warning signals, tail risk control, stochastic correlation and DCC models..*

Long-term cooperation with the Centre for Financial Research of the University of Cambridge (U.K., Prof. Michael Dempster), with the school of Mathematics and Statistics of Jiaotong University (China, Prof. Zhiping Chen), the OR and stochastic programming group at Georgia Tech (U.S., Prof A. Kleywegt), the Charles University of Prague (CZR, Prof.Milos Kopa).

Strong cooperation links  in Italy with the Departments of Mathematics at Polithecnique of Turin (Prof. Paolo Brandimarte), of Economics at University Ca'Foscari in Venice (Prof. Elio Canestrelli and prof. Diana Barro), of Quantitative methods and Statistics at University La Sapienza of Rome (Prof. Rita D'Ecclesia) and  with both Departments of Quantitative methods in Economics (Dr. A. Hitaj and Prof.S.Stefani), and Computer Science and Operations Research at University of Milan Bicocca (Prof.E.Messina and Prof.F.Archetti).

---

**H.      DIRECTION OF RESEARCH CENTERS AND RELATED EDITORIAL SERIES**

---

## FinMonitor, Research Centre on Merger and Acquisitions in the financial industry

University of Bergamo, Director

Director from March 2006 until October 2010. Research and publication activity focusing on M&A strategies by financial and insurance intermediaries within 5 EU countries plus Swutzerland. Monthly analyses and Semiannual reports and case studies. Fully funded by banks and associates.

### -      *FinMonitor Research Series (in Italian)*

As FinMonitor Director, the following research studies and case studies have been published and distributed only among funding associates. The studies are in Italian and  can be made available upon request:

Authors: G.Consigli, E.Benincasa ed E.Bosco

F1.      Rapporto FinMonitor n.6 (July 2006): L'impatto delle fusioni ed aggregazioni bancarie sulla concorrenza nel settore bancario italiano:
analisi della concentrazione

F2.      Rapporto FinMonitor n.7 (December 2006): L'impatto delle fusioni ed aggregazioni bancarie sulla concorrenza nel settore bancario italiano:
analisi della relazione tra concentrazione e concorrenza

F3.      Rapporto FinMonitor n.8 (July 2007): Processi di M&A e scenari economici e finanziari: specificità ed analisi comparative nell'UE5 – I Parte

F4.      Rapporto FinMonitor n.9 (December 2007): Processi di M&A e scenari economici e finanziari: specificità ed analisi comparative nell'UE5 – II Parte

F5.      Rapporto FinMonitor n.10 (July 2008): Presenza bancaria estera in Italia

Case-studies:

CS1.      Rapporto FinMonitor n.6 (July 2006): La fusione Chase Manhattan-JP Morgan

CS2.      Rapporto FinMonitor n.7 (December 2006): La fusione Deutsche bank-Bankers Trust

CS3.      Rapporto FinMonitor n.8 (July 2007): La fusione Credit Agricole-Credit Lyonnais

CS4.      Rapporto FinMonitor n.9 (December 2007): L'operazione Royal Bank of Scotland-Churchill Insurance

CS5      Rapporto FinMonitor n.10 (July 2008): L'anno *terribilis* di ABN Amro

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

---

## I.    RESEARCH GRANTS

**Research Grants funded by National Research Council and International bodies**

**1  ALIAS project 2011-2014: "High Education and Internationalization in the Ageing Society".** Project coordinated by the University of Milan Bicocca (prof.Stefania Bandini), partner universities: University of Brescia, University of Tokyo, Tohoku University, University of Umm Al-Qura (Saudi Arabia), International University of Japan. I was affiliated to the Bicocca University, member of the Educational Committee of the project and PhD supervisor, reference for economic and financial research related to ageing. Main research topics: Active ageing, Ageing health care implications and planning, Transportation and Logistics in aged societies,  financial and economics in aged societies, smart cities, innovation and infrastructural support to aged societies.

**2  PRIN2007 NRC grant 2008-2009**: **"Stochastic dynamical systems optimization with applications to finance".** National coordinator and responsible of the University of Bergamo research unit (RU) in cooperation with the RU's at the University of Calabria (Prof.ssa Patrizia Beraldi) and University of Milano Bicocca (Prof.ssa Enza Messina). Research topics: dynamic optimization techniques and statistical methods for individual asset-liability management and credit risk management for corporate bond portfolios. Development of a simulation and optimization environment based on Matlab and GAMS plus VBA for linear and nonlinear large-scale optimization on realistic industry-based case studies. **[Annex 9]**

**3  PRIN2005 NRC grant 2006-2007**: **"Credit risk measurement and control for portfolios exposed to default risk"** coordinated at national level by Professor Costanza Torricelli of the University of Modena. Coordinator of the UniBG R.U. Research topics: market and credit risk reduced form correlated model. Development and implementation within a credit risk management dynamic model.

**4  PRIN 2002 NRC grant 2002-2004: "Methods and techniques for portfolio optimization and the valuation of financial instruments**" coordinated at national level by Prof.ssa M. Bertocchi, University of Bergamo, member of the research unit coordinated by Prof.ssa Bertocchi.

**5  High Performance Computing for Financial Planning** under Uncertainty. INCO '95 PROJECT 951139. **1995-1998**. Funded by the European Community – D.G. III (Industry).
Cambridge research team directed by Professor Michael A.H. Dempster.  Project title: Integrated Asset-Liability Management Using Dynamic Stochastic Programming: Expected Value of Perfect Information (EVPI) Sampling. PostDoc of the R.U..

**6  UK EPRSC  1996 Grant**, **CFR Dynamic Portfolio Management** Project, **1996-1997**, funded by the British Research Council – UK EPRSC – and FECIT, Fujitsu Lab in the UK.  Sponsors: UK EPRSC and Fujitsu Lab. Location: Cambridge (UK), Duration: 24 months. Team:  Financial Research center of the University of Cambridge directed by Michael Dempster. Focus: development of optimization algorithms and sampling methods for large-scale financial management problems.

An extended set of research projects has been funded by the University of Bergamo annualy since 2006, until 2012 on a flat basis, associated with the academic position and then since 2013 increasingly relying on research and scientific results thus promoting research and publication efforts. I am not listing those projects which have been regularly following the research topics described above and whose budget varies from 1.500 until 3.000 euros per year roughly.

---

## J.    R&D PROJECTS FOR PRIVATE SECTORS AND TECHNOLOGY TRANSFER

My research activity developed over the years in strict connection with the financial industry and my effort has been constantly directed to stimulate rigorous research from practical issues and transfer advanced and state-of-the-art results into the financial practice.

**1      DAPO for P&C ALM v 1.0, v 2.0, v 3.0 and v.4.0 (**2010-2019**) R&D** project funded by **Allianz Investment Management (AIM) Italy and Munich (HDQ) Allianz Group,** on Property and Casualty Asset-Liability Management. Coordinator and Project leader of the UniBG team including Prof. V.Moriggia, and for v. 1, 2 and 3: dr. G.Iaquinta, dr. A.Uristani, dr. Lorenzo Mercuri, Mrs.Elena Benincasa and Mr Vivek Varun. (phase 1: October 2010-September 2011; phase 2: October 2011-March 2012; phase 3: July 2012-December 2012) and for 4.0 (July 2018-January 2019) Dr Sebastiano Vitali and Dr Vivek Varun . Key project features: pilot system for long term (10 years)  P&C ALM based on stochastic programming techniques, core and alternative investments. Multi-criteria objective function with functional and regulatory constraints, global problem. Software environment: Matlab with Excel I/O and GAMS model

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

generator and solution methods. The current project aims at introducing together with the optimization tool a full fledged Simulation tool for policy simulation and sensitivity analysis.

**2        Dynamic Allianz Portfolio Optimiser (DAPO) for Pension Fund Management** project (2014-2016) funded by **Allianz Investment Management (AIM) Italy and Munich (HDQ) Allianz Group,** on internal Pension Fund Asset-Liability Management. Coordinator and Project leader of the UniBG team including Prof. V.Moriggia, dr. F.Petronio, Mrs.Elena Benincasa, Mr. Giacomo Landoni, Mr. Sebastiano Vitali.  Phase 1: October 2014-March 2015; phase 2: November 2015-October 2016. Project features: pilot system for long term (20 years) Pension Fund ALM based on stochastic programming techniques. Multi-criteria objective function with functional and regulatory constraints, global problem. Software environment: Matlab with Excel I/O and GAMS model generator and solution methods.

**3        UniCredit Pension Fund ALM system** (2013-2015): project funded by the Pension Fund of the UniCredit Financial Conglomerate. It is a mixed – defined benefit and defined contribution – occupational Pension Fund with over 30.000 active and passive members.  It is three-sided project with the PF as coordinator and final user interested to build a proprietary ALM system, the National Research Council (NRC) as software developer and University of Bergamo with myself as project coordinator for all the modeling and mathematical tasks.

**4        EFM4Cast** project sponsored by **Unione Banche Italiane (UBI)**: May-Dec 2009 with the title Financial and economic scenarios across the economic and credit crisis and 2009-2012 forecast. Coordinator, project team: prof.G.Urga, dr.G.Iaquinta, dr.E.Benincasa, Mr. R.Pianeti, Mr. M.Angonese. Project features: Integrated economic and capital market model plus banking model for the Italian banking sector. Stochastic volatility and covariance model for the financial markets. Dedicated Systemic risk model. Environment: Matlab, Excel I/O and PCGive econometric tool. Output: economic and financial forecaster for the Euro area and Italy, Italian banking system aggregates forecaster. Quarterly data over 3 year forecast horizon.

**5        Personal AIM v 1.0 R&D** project funded by **Allianz Investment Management (AIM) Italy, Allianz Group,** on Individual Asset-Liability Management (May-November 2009). Coordinator of the FinMonitor-UniBG project team including Prof. V.Moriggia, dr. G.Iaquinta and Mrs Simona Boffelli. Key project features: pilot system for long term (10 years)  individual planning based on stochastic programming techniques, fixed income and equity financial risk factors, individual risk preference with aims. Software environment: Matlab with Excel I/O and GAMS model generator and solution methods.

**6        Operational risk assessment tool 2006:**  12 months development for UBI bank in Bergamo. Team: two bank analysts, three researchers from DMSIA of University of BG, two researchers from Univ of California. Dr. Consigli has supported in the definition of the implemented models and the production of the research documentation. Project coordinators: prof Bertocchi (UniBG) and prof Z Rachev (Univ of California (US) and Karlsruhe (Ger)

**7        Strategic Asset Allocation Project, 1995-1996, funded by the Frank Russell Company (US)** for the development of a portfolio allocation tool employing the Brennan-Schwartz-Lagnado version of the lifetime stochastic control system of Merton.  Team director: Professor Michael Dempster. Sponsor: Frank Russell Company. Location: Cambridge, Duration: 15 months. PostDoc of the R.U.

Main (individual or in cooperation as scientific responsible) projects during the **2002-2005** period:

   **Insurance pricing tool for SACE SpA**, state controlled foreign trade insurance company in Italy. Individual project SACE SpA, *Società per l'assicurazione del Commercio estero*, Rome, Via Pola 5. Location: Roma, **2005**.

   **Credit Risk Management system** for **SACE SpA 2003-2005** in cooperation with Operational Research Systems (ORS).  SACE SpA, *Società per l'assicurazione del Commercio estero*, sede Roma, Via Pola 5. Location: Roma ed Alba (ORS), Duration: 2003 e 2004-2005. Scientific responsible and project coordinator. Comprehensive risk management tool with economic, political and sovereign risk pricing and mapping techniques

   **Corporate risk monitor** developed for UniCredit Banca Mobiliare, UniCredito Italiano  **2003-2004**. UniCredit Banca Mobiliare (UBM), Milan Location: Milan, sede UBM, Duration: 24 months. Team: individual development in cooperation with the credit analysts of the bank. Development of an innovative statistical tool to assess and rate market corporate debt.

   **Personal Financial Planning system 2002-2003 developed** for Merrill Lynch Italy in cooperation with Operational Research Systems (ORS). Sponsored by Merrill Lynch Italia, Milan Location: Milan and Alba (ORS), duration: 12 months. Scientific responsible Giorgio Consigli, project coordinator Pierluigi Riva, chairman of ORS.

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

**Emerging market real time benchmark** development. UniCredit Banca Mobiliare, UniCredito Italiano **2002**. Sponsored by UniCredit Banca Mobiliare (UBM) Milan. Location: Milan, Duration: 12 months. Individual development in cooperation with the software house FMR (Vigevano)

---

| **K.** | **Conferences** |
|---|---|

In this section a list of attended conferences and conferences and events organized directly by me. In alphabetical order by scientific group and within each group in chronological order.

### K.1 Organization and Scientific chairs

8-9.2.2018: **UniBG-GeorgiaTech 3rd workshop on Stochastic Optimization and Data Analytics** for Computational Management www.unibg.it/SODACM2018 at the University of Bergamo, **scientific coordinator**.

30.5-1.6.2017: **CMS2017 GeorgiaTech-UniBG-CMS J** 2017 International conference on Risk, Pricing and Optimization in Management Science www.unibg.it/cms2017 at the University of Bergamo, **scientific chair** and member of the Organizing committee.

6-13.7.2013: Bergamo **XIII International Conference on Stochastic Programming** www.unibg.it/ICSP2013, Organizing committee and **scientific chair.**

29.8.2011: Bergamo **Prin 2009-2010 Workshop** *Agents' Behaviour in face of Decisions and Models Complexity*, in honour of Marida Bertocchi 60th anniversary. Main organiser.

7.9.2009: Siena (IT) **Pre-AIRO Workshop** *Beyond the financial crisis* organized in cooperation with Prof. Bemporad from the University of Siena.

23—28.11.2009: Bergamo **Stochastic programming school 2009**, University of Bergamo www.unibg.it/sps2009/ Main Organiser and **scientific coordinator**. CARIPLO Advanced training program. Opening lecture on: Introduction to stochastic programming: theory and methods.

10—20.4.2007: Spring School on Stochastic Programming: Theory and Applications SPS2007. Main Organiser and **scientific coordinator** www.unibg.it/sps2007/.

23.10.2008 Bergamo, University of Bergamo. Workshop **Innovazione finanziaria, sviluppo aziendale e stabilità finanziaria** organised in cooperation with dr Claudio Gervasoni Confindustria Bergamo, www.unibg.it

23.4.2004: Milan, University Luigi Bocconi. Workshop **Beyond Value-at-Risk** organized in cooperation with prof. F.Corielli

As responsible of UBM, Unicredit's Investment Bank, a series of in-house conferences were organized in cooperation with the University of Bocconi (MI) on the subject of **Value-at-Risk** and regulatory risk measures and in cooperation with the University College of Dublin and Europlus the *Finance and Asset Management Workshop Series* at the University College Dublin Conference Centre.

### K.2 Invited or keynote speaker (last 6 years)

3-6.7.2021: Venice (IT) ECSO-CMS2021 International European Conference on Stochastic Optimization and Computational Management Science. Invited **plenary speaker** https://www.unive.it/pag/38159. **Postponed to 2021 due to Covid-19 related health policy.**

29.9.2019: Trondheim (NO) ICSP2019 XV International Conference on Stochastic Programming, https://www.ntnu.edu/web/icsp/icsp2019 , invited **semiplenary speaker** in the Mini Symposium on New frontiers in finance. Semiplenary: Asset-liability management under distributional uncertainty: benchmarking SP-based optimal policies with DRO.

26-28/11/2018: Buzios (Brasil) **Research in Options 2018**, https://impa.br/en_US/eventos-do-impa/eventos-2018/research-in-options-2018/ organized by IMPA. Invited speaker: *Derivatives-based portfolio management via multistage stochastic programming.*

12-13/4/2018: Seoul (South Korea) **4University rotating Fintech conference**, 2nd conference held in Seoul and organized by KAIST http://wmt.kaist.ac.kr/eng/conference.html. Invited **plenary**: *Asset-liability management and goal-based investing for the Retail business in the robo-advisory era.*

22.2—25.2.2017: Teheran (IRAN) **Iranian Financial Engineering Association** 5th National conference, University of Teheran e Islamic Azad University of Iran. **Plenary**: *Optimal financial decision making under uncertainty*

25.2—30.2.2016: Series of conferences and workshops at: Teheran (IRAN) **Iranian Financial Engineering Association** 4th National conference, University of Teheran and Islamic Azad University of Iran, at IAU's in Tehran Branch, Qazvin Branch and Rash Branch on Pension Fund management, Ageing and economy, decision support tools for ALM.

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

18.2.2016: Benevento (IT), **University of Sannio.** Invited seminar: *Solvency II-compliant dynamic risk control and strategic asset allocation for a P&C portfolio.*

23.11.2015: Venice (IT), **University Ca' Foscari of Venice**. Invited seminar: *Optimal long-term management of a P&C insurance portfolio with endogenous risk.*

28.2.2015: Teheran (IRAN) **Iranian Financial Engineering Association** 3rd National conference, University of Teheran and Islamic Azad University of Iran. Plenary talk: *Dynamic Asst-Liability management of a P/C insurance portfolio with endogenous risk control.*

5.7.2014: Xi'an Shaanxi (China) **Xi'an Jiaotong University**. Invited seminar: *Individual asset-liability management and optimal retirement strategy*

26.3.2013: Princeton (NJ, USA), **Princeton Univ ORFE Colloquia.** Invited seminar: *Optimal long-term management of a P/C insurance portfolio with endogenous risk control*

### K.3      *Selected conference streams regular attendance*

**AIRO – Operations Research Italian Association:  AIRO2018:** Taormina ODS2018 University of Catania; **AIRO2015:** University of Pisa, **AIRO2014**: University of Piemonte Orientale, **AIRO2012**: University of Salerno; **AIRO2011**: University of Brescia, **AIRO2009,**  University of Siena; **AIRO2008**, University of Naples; **AIRO2000,**University of Milan Bicocca.

**AMASES – Applied mathematics in economics and finance Italian Association: AMASES2017,** University of Cagliari, **AMASES2016,** University of Catania, **AMASES2013,** University of Insubria; **AMASES2011,** University of Pisa; **AMASES2010**, University of Macerata;  **AMASES2009**, University of Parma;  **AMASES2006**, University of Trieste; **AMASES2005,** University of Palermo;  **AMASES2004,** University of Modena; **AMASES2003,** University of Cagliari.

**APMOD –  Applied Modelling and Optimisation**
**APMOD2014,** Coventry, England; Lecture: *Endogenous risk control of a P/C insurance portfolio*
**APMOD2012,** Paderborn, Germany; Lecture: *Property and casualty asset-liability management*.
**APMOD2008,** Bratislava, Slovakia; Lecture: *Scenario generation for financial planning problems*
**APMOD2002,** Varenna, Italy; Lecture: *Scenario generation for long-term pfp problems formulated as dynamic stochastic programs.*
**APMOD2000,** London (UK); Lecture: *Extreme scenario generation for stochastic programming problems.*

**CMS – Computational Management Science**
**CMS2018** Trondheim (NO): organized by Norwegian University of Science and Technology https://www.ntnu.edu/cms2018/   member of the scientific committee**,** section on Financial optimisation
**CMS2017** conference Bergamo (IT): organized by University of Bergamo www.unibg.it/cms2017 member of the organising committee and scientific chair
**CMS2016** Salamanca (SP): organized by the univ. Rey Juan Carlos di Madrid http://www.cms2016.com, member of the scientific committee, stream Financial Decision Making
**CMS2015** Praga (CZR): organized by the Charles University of Prague http://cms2015.cuni.cz/ section of Stochastic optimization in finance
**CMS2014** Lisbona (PT): organized by University of Lisbona http://cms2014.fc.ul.pt/

**EURO INFORMS – Euro Conference on Operations Research**
**EURO2015** conference Glasgow (UK) Straithclyde University, Stream organiser Stochastic Programming and speaker
**EURO2013** conference Rome (IT) University of Rome La Sapienza, Stream organiser Stochastic Programming and speaker
**EURO2012** conference Vilnius (LT) organised by the University of Lithuania. Stream organiser Stochastic Programming and speaker
**EURO2010** conference Lisbon (POR) organised by the University of Lisbon. Stream organiser SP applications in finance  and speaker
**EURO2009** conference Bonn (GER) organised by the University of Bonn.  Stream organizer on Financial Instability and speaker
**EURO2007** conference Prague (CZR), Charles University of Prague. Faculty of Economics and speaker
**EURO2006** Reykjavic (ISL) University of Rekjavic and speaker

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

**EWGFM – Euro Working Group on Commodity and Financial Modelling**

**LV Euro WG 2014** organized by University of Milan Bicocca. Lecture: *Applying stochastic programming to insurance portfolios stress-testing*

**L Euro WG 2012** organized by the University of Rome. Lecture: *A systemic risk indicator and monetary policy*

**XLVI Euro WG 2010** organized by the University of Istanbul (TR). Lectures: *Simultaneous market and credit risk control on a generic bond portfolio during the credit crisis* and *Endogenous equity risk*

**XLV Euro WG 2009** organized by the Polithecnic of Crete (GR). Lecture: *Endogenous risk factors in International equity markets*

**XL Euro WG 2007** University Erasmus of Rotterdam. Lecture: *Spread puzzle and risk premiums: theoretical implications and market evidence in the Corporate CDS market*

**XXXVI Euro WG 2005** Dept of Economics, University of Brescia. Lecture: *A corporate model of default risk premium, implied volatility and leverage: theory and market evidence*

**XXXIV Euro WG 2004** University ESCP-EAP in Paris. Lecture: *Corporate spread dynamics and equity volatility*

**XXXII Euro WG 2003** Dept of Economics University of Sheffield and Imperial College. Lecture: *Risk measurement and control beyond mean-variance: a new approach*

**XXX Euro WG 2002** Organized by Department of Quantitative Methods of the Faculty of Political Sciences of the University of Rome La Sapienza (IT). Vice chairman of the Organizing Committee. Lecture: *Mean-VaR portfolio selection in unstable markets*.

**XXIX Euro WG 2001** Department of Finance of the Erasmus University (Rotterdam). Lecture: *Financial Modelling based on Extreme Value Analysis.*

**XXV Euro WG 1999** organised by the Institute fur Finanzierung und Finanzmarkte University of Vienna. Lecture: *Intensity-based default risk estimation and characterisation of high-risky portfolio value processes. The ShockGen system.*

**ISMP – International Symposium on Mathematical Programming**

**ISMP2012** Berlin (GE) 21st ISMP, Humboldt University. Lecture: *Institutional ALM for a large P/C Insurance Company*

**ISMP2011** Charlotte (US) 20st ISMP, University of North Carolina. Lecture: *P&C portfolio optimization*

**ISMP2000** Atlanta (US) 17th ISMP, Georgia Institute of Technology. Lecture: *A stochastic programming model for an A/L management problem with extreme scenarios.*

**ISMP1997** Lausanne (CH) 16th ISMP, Polithetnic of Lausanne. Lecture: *EVPI sampling for dynamic stochastic programmes.*

**RMRC – Risk Measurement and Risk Control**. Main organiser Prof.ssa R.L.D'Ecclesia Univ. La Sapienza of Rome.

**ISS2012.** International summer school, University of Rome La Sapienza and University of Lugano. Invited lecture: *Retirement planning in individual ALM.*

**ISS2010.** International summer school, jointly organized by La Sapienza and University of Lugano. Invited lecture: *Optimal strategies for retirement planning*

**RMRC2007**. Università degli Studi di Roma La Sapienza. Invited lecture: *A Cox model for equity returns.*

**RMRC2004**. Università degli Studi La Sapienza. Lecture: *An integrated approach to VaR optimal convex approximation*

**RMRC2003**. Università degli Studi di Roma La Sapienza. *Invited lecture: Risk measurement and control under Poisson-Gaussian assumptions*

**SPX-ICSP – International Conference on Stochastic Programming**

**SPXV 2019:** Member of the Scientific Committee and invited semiplenary speaker in the MS on *New frontiers on financial decision making under uncertainty*, https://www.ntnu.edu/web/icsp/minisymposia

**SPXIV 2016:** Invited member of the scientific committee Buzios, Brasil: http://icsp2016.sciencesconf.org/. Organiser of two thematic sessions. Lecture on: *Optimal pension fund liability replication with dynamic stochastic programming*

**SPXIII 2013** University of Bergamo. Scientific chair, lecture: *Optimal capital allocation and strategic portfolio selection for a large P/C insurer*

**SPXII 2010** School of Management of Dalhousie University. Lecture: *Asset-liability-management for a P&C insurance company*

**SPXI** 2007 University of Vienna. Lecture: *Scenario generation for corporate portfolios.*

Giorgio Consigli born in Rome on June 28, 1959 and living in Via Raffaello Sanzio 26, 20149 Milan (IT)
Cell. +39-335 -7373585, Univ +39-035-2052685, Fax: +39-035-2052549
giorgio.consigli@unibg.it

**SPX 2004** University of Arizona in Tucson. Lecture: *The CMZ model for speculative markets*

**SPIX 2001** Humboldt University of Berlin. Lecture: *Large scale optimisation for enterprise wide risk management*

**SPVIII 1998** Vancouver (CA), University of British Columbia. Lecture: *Sequential importance sampling for dynamic stochastic programming*

**SPVII 1995** Naharyia (ISR), University of Haifa, Israel. Lecture: *A stochastic programming formulation of ALM problems*

& & &

**All the content of this scientific and professional curriculum is truthful and it respects articles 46 and 47 of the D.P.R. 445/2000.**

In faith
September 13, 2020

Giorgio Consigli