

FABIO TROJANI
CURRICULUM VITAE

CONTACT

Professor of Finance and Statistics, Geneva School of Economics and Management, Geneva Finance Research Institute and Swiss Finance Institute, University of Geneva, Bd du Pont d'Arve 40, 1211 Geneva 4, Switzerland; Tel: +41 22 379 80 08; E-mail: Fabio.Trojani@unige.ch; web Page: <http://www.people.usi.ch/trojanif/>

EDUCATION

1991: Lizenziat der Wirtschaftswissenschaften (direction Economics, special direction Econometrics), University of Zurich.

1997: Ph. D. in Econometrics/Finance, University of Zurich.

EMPLOYMENT

1997-2000: Maître assistant in Statistics/Econometrics, Università della Svizzera Italiana (USI), Switzerland.

2000-2004: Assistant professor in Statistics-Econometrics-Quantitative Finance, USI.

2004-2008: Full professor of Finance, Chair in Empirical Finance and Director of the Swiss Institute of Banking and Finance, University of St. Gallen, Switzerland.

2009-2013: Swiss Finance Institute Research Fellow.

2009-2015: Full professor of Statistics, USI.

2012-2013: Visiting Professor of Finance, University of Geneva, Switzerland.

2014-2020: Adjunct Professor of Finance, University Bocconi, Italy.

2014-: Swiss Finance Institute Senior Chair.

2015-: Full professor of Finance and Statistics, University of Geneva, Switzerland.

RESEARCH INTERESTS

Asset pricing and portfolio theory, option pricing, dynamic equilibrium models, robustness and ambiguity in finance, model-free recovery approaches, information-theoretic methods in finance and econometrics, applications of machine learning techniques to finance, time series econometrics, financial econometrics, robust statistical methodologies

GRANTS

2001: Asset Management of Hedge Funds Investing in Developed and Emerging Markets, KTI/CTI Grant, CHF 120'000 (project director).

2002-2003: Robust Strategies for Risk Management, Asset Pricing and Option Pricing. Grant of the Swiss National Science Foundation, CHF 240'000 (project director).

2003-2005: Robust Bootstrap Methods, Grant of the Swiss National Science Foundation, NCCR FINRISK, Subproject 10, CHF 170'000 (project co-director with O. Scaillet).

2004-2005: Ambiguity and Robustness in Yield Curve Modelling, NCCR FINRISK, Subproject 2, CHF 86'000 (project co-director with R. Gibson).

2004-2005: Learning and Robustness in Time Series Models. Grant of the Swiss National Science Foundation, CHF 175'000 (project director).

2005-2006: New Empirical Approaches in Asset Pricing, Grant of the Swiss National Science Foundation, CHF 282'414 (project co-requirer).

2005-2009: New Methods in Theoretical and Empirical Asset Pricing, NCCR FINRISK subproject, CHF 900'000 (project director).

2006-2009: PhD in Economics and Finance, SNF Pro*Docs Training Module: CHF 243'000 (project director).

2006-2009: New Methods in Moments Based Econometric Methods, SNF Pro*Docs Research Module: CHF 387'000 (project co-requirer).

2006-2008: Statistical learning from imperfect observations under prior ignorance, Grant of the Swiss National Science Foundation, CHF 126'000 (project co-requirer).

2009-2013: New Methods in Theoretical and Empirical Asset Pricing, NCCR FINRISK subproject, CHF 1'200'000 (project director).

2013-2016: Trading Asset Pricing Models, SNF research project, CHF 162'900 (project co-requirer).

2013-2016: Term Structures and Cross-Sections of Asset Risk Premia, SFI research project, CHF 640'000 (project director).

2013-2017: Higher Order Robust Resampling and Multiple Testing Methods, SNF research project, CHF 598'950 (project director).

2019: A General Machine Learning Approach to High-Dimensional Asset Pricing, Geneva Institute of Wealth Management research project (CHF 15'000, project co-director).

2020: RESOLOS–Reproducible research environments made simple, University of Geneva research project on eResearch and Data Management (CHF 70'425, project director).

2020-2023: New Methods for Asset Pricing with Frictions, SNF research project, CHF 858'124 (project director).

HONOURS AND AWARDS

2003: German Finance Association best conference paper award for "Equilibrium Impact of Value-at-Risk" (with M. Leippold and P. Vanini), German Finance Association Meeting, Mainz; **2005:** Best Researcher Award of the Department of Economics, University of St. Gallen; **2007:** Inquire Europe best paper award for "Correlation Risk and Optimal Portfolio Choice" (with A. Buraschi and P. Porchia); **2008:** Inquire Europe Research Grant (10000 BP) for the project: "When There is No Place to Hide - Correlation Risk and the Cross-section of Hedge Fund Returns" (with A. Buraschi and R. Kosowski); **2010:** Inquire Europe Research Grant (10000 BP) for the project: When Uncertainty Blows in the Orchard: Comovement and Equilibrium Volatility Risk Premia (with A. Buraschi and A. Vedolin); **2010:** Inquire Europe best paper award for "When There is No Place to Hide - Correlation Risk and the Cross-section of Hedge Fund Returns" (with A. Buraschi and R. Kosowski); **2012:** Nyse-Euronext best paper award for "The cross-section of expected stock returns: learning about distress and predictability in heterogenous orchards" (with A. Buraschi and P. Porchia), EFMA 2012 annual meeting, Barcelona; **2009-2013:** Swiss Finance Institute Research Fellow; **2019:** GIWM Project in Wealth Management (15000 CHF): A General Machine Learning Approach to High-Dimensional Asset Pricing (with S. Scheidegger); Best paper award on Derivatives from the Northern Finance Association for "The Price of the Smile and Variance Risk Premia" (with P. Gruber and C. Tebaldi); **2014-:** Swiss Finance Institute Senior Chair; **2014-2020:** Adjunct Professor of Finance, University Bocconi, Milan.

EDITORIAL ACTIVITY

Associate Editor, Journal of Financial Econometrics (2012-2015).

Co-Editor, Journal of Financial Econometrics (2015-2019).

Managing Editor, Journal of Financial Econometrics (2019).

REFeree

Australian Economic Papers, Automatica, Annals of Operations Research, Annals of Statistics, Biometrika, Canadian Journal of Statistics, Computational Management Science, Economic Notes, Econometric Reviews, Econometric Theory, Finance and Stochastics, Finance Research Letters, Journal of Banking and Finance, Journal of Business and Economic Statistics, Journal of Economic Theory, Journal of Econometrics, Journal of Finance, Journal of Financial Econometrics, Journal of Financial Economics, Journal of Economic Dynamics and Control, Journal of International Money and Finance, Journal of Nonparametric Statistics, Journal of Political Economy, Journal of the American Statistical Association, Journal of the Royal Statistical Society, Management Science, Mathematical Finance, Metron International Journal of Statistics, Review of Economic Studies, Review of Finance, Review of Financial Studies, Swiss Journal of Economics and Statistics.

PHD STUDENTS (WITH FIRST JOB WHERE AVAILABLE)

Loriano Mancini (2004, Assistant Professor of Finance, EPFL, Switzerland); Paolo Porchia (2004, Assistant Professor of Finance, Istituto de Empresa, Madrid, Spain); Andrea Vedolin (2009, Assistant Professor of Finance, London School of Economics, UK); Davide la Vecchia (2011, Assistant Professor of Financial Econometrics, Monash University, Australia); Alberto Piatti (2006, Professor at SUPSI, Professional University of Southern Switzerland); Lorenzo Camponovo (2009, Assistant Professor of Mathematics, University of St. Gallen, Switzerland); Anna Cieslak (2011, Assistant Professor of Finance, Northwestern University, US); Pavol Povala (2013, Assistant Professor, Dept. of Economics, Mathematics and Statistics, Birbeck, University of London, UK); Ilaria Piatti (2014, Assistant Professor of Finance, Said Business School, Oxford, UK); Peter Gruber (2015, Lecturer at USI and SUPSI, Switzerland); Piotrek Orlowski (2017, Assistant Professor of Finance, HEC Montreal, Canada); Mirela Sandulescu (2020, Assistant Professor of Finance, University of Michigan, USA). Alberto Quaini, Sofonias Korsaye and Andrea Maino, University of Geneva, in progress.

EXTERNAL PHD COMMITTEE MEMBER

Jan Wrampelmeyer ("Ambiguity, Illiquidity and Hedge Funds", SFI PhD in Finance, University of Zurich, April 2011); Ronald Gindrat ("Essays on Ambiguity and Asset Pricing", PhD in Economics, Mention in Finance, University of Geneva, June 2012); Simon Dubecq ("Stress-Test Exercises and the Pricing of Very Long-Term Bonds", PhD in Applied Mathematics, University of Paris Dauphine, January 2013); Luca Tiozzo ("Specification Analysis of Interest Rates Factors: An International Perspective", Doctorat en Science de Gestion, University of Paris Dauphine, December 2013); Qunzi Zang ("Essays in Higher Moment Asset Pricing and Liquidity Risk", Doctorat en Sciences Economiques, Mention Finance, University of Lausanne, May 2014); Paul Whelan ("Beliefs about Growth and Real Bonds", PhD in Finance, Imperial College Business School, October 2014); Pirmin Meier ("Essays on Pricing Kernel Estimation, Option Data Filtering and Risk-Neutral Density Tail Estimation", PhD in Economics and Finance, University of St. Gallen, November 2014); Mariana Khapko ("Essays in Financial Economics", PhD in Finance, Stockholm School of Economics, October 2015); Ali Noori Khayavi (The Econometrics of Realized Divergence, PhD in Statistics, University Bocconi, Milano, January 2017 (thesis director)); Kai Wang (Essays in Asset Pricing, PhD in Finance, University Bocconi, Milano, February 2019); Regina Hammerschmid (Essays on the Pricing of Commodity and Currency Returns, SFI PhD in Finance, University of Zurich, July 2019); Yunhao He (Essays on Factor Asset Pricing, SFI PhD in Finance, University of Zurich, January 2020).

TEACHING (CURRENT COURSES HIGHLIGHTED IN BOLD)

University of Geneva

Models and Empirical Methods for Asset Pricing, 2012- (graduate course, Master level); **Data Analysis and Advanced Financial Modelling, 2017-** (graduate course, Executive PhD level); **Risk Management in Private Banking, 2018-** (graduate course, Executive PhD level); Dynamic Asset Pricing, 2017-2019 (SFI graduate course, PhD level); Numerical Methods in Finance, 2013-2014 (graduate course, Master level);

Geneva Graduate Institute

From Data Science to Hedge Fund Performance, 2016-2018 (overseas executive training program for senior management staff from China construction bank); Digitalization and New Trends in the Financial Industry, 2017-2018 (overseas executive training program for senior management staff from China construction bank).

Università della Svizzera Italiana (USI)

Data Science and Convex Optimization Methods for Empirical Finance, 2020- (graduate course, Master and PhD level); Asset Pricing, 2015-2019 (graduate course, PhD level); Statistics I, 2010-15 and 2018 (first year undergraduate course); Probability II, 2011-14 (graduate course, Master level); Probability, 2011-14 (graduate course, PhD level); Time Series Analysis, 2011-14 (graduate course, PhD level); Introduction to Probability Theory for Finance, 2005-2011 (graduate course, Master level and PhD level); Quantitative Methods for Finance, 2001-2004; Statistics for Economists, 1997-2004; Portfolio Theory, 2003; Mathematics for Economists, 1997 (first-fourth year undergraduate courses).

University Bocconi

Selected Topics in the Trading and Modelling of Volatility and Other Risks, 2019- (graduate course, Master level); Continuous Time Finance, 2009-18 (graduate course, PhD level).

Imperial College Business School

Advanced Asset Pricing, 2013 (graduate course, PhD level).

Collegio Carlo Alberto

Econometrics, 2009-2011 (graduate course, Master level).

University of St. Gallen

Theory in Finance, Advanced Time Series Econometrics, Financial Econometrics, Advanced Financial Decision Making and Asset Pricing, 2005-2008 (graduate courses, PhD level); PhD and Literature Seminars, 2005-2008 (advanced seminars, PhD level); Asset Pricing, 2004-2008 (graduate course, Master level); Introduction to Econometrics, 2005-2008 (third year undergraduate course).

PROGRAM COMMITTEES

2006: International Workshop on Quantitative Finance, University of Perugia, Italy, January 26-27; International Workshop on Grid Technology and Financial Modeling Simulation, Palermo, Italy, February 3-4; European Finance Association Meeting, Zurich, Switzerland, August 23-26.

2007: International Workshop on Quantitative Finance, University of Venice, Italy, January 25-26; Italian Congress of Econometrics and Empirical Economics, University of Bologna, Italy, January 25-26; Chairman of the Program Committee of the Annual Meeting of the Swiss Society of Economics and Statistics, University of St. Gallen, Switzerland, March 22-23; European Finance Association Meeting, Ljubljana, Slovenia, August 22-25.

2008: International Workshop on Quantitative Finance, University of Rome Tor Vergata, Italy, January 24-25.

2009: European Finance Association Meeting, Bergen, Norway, August 19-22.

2010: European Finance Association Meeting, Frankfurt, Germany, August 25-28.

2011: European Finance Association Meeting, Stockholm, Sweden, August 17-20.

2012: European Finance Association Meeting, Copenhagen, Denmark, August 15-18.

2013: Large Scale Factor Models in Finance, Society of Financial Econometrics Conference, Lugano, October 11-12.

2014: Swiss Finance Institute Research Day, Gerzensee, Switzerland, June 1-2; European Finance Association Meeting, Lugano, Switzerland, August 27-30; Annual Meeting of the Society of Financial Econometrics, Toronto, Canada, June 11-13.

2015: Swiss Finance Institute Research Day, Gerzensee, Switzerland, June 8-9; European Finance Association Meeting, Vienna, Austria, August 19-22; Annual Meeting of the Society of Financial Econometrics, Aarhus, Denmark, June 24-26.

2016: Swiss Finance Institute Research Day, Gerzensee, Switzerland, June 5-7; European Finance Association Meeting, Oslo, Norway, August 17-20; Annual Meeting of the Society of Financial Econometrics, Hong Kong, June 14-17; 3rd International Association of Applied Econometrics Conference, Milan, June 25-27; Conference on Derivatives and Volatility, Financial Management Association, Chicago Board Options Exchange, November 10-11.

2017: Swiss Finance Institute Research Day, Gerzensee, Switzerland, June 12-13; European Finance Association Meeting, Mannheim, Germany, August 23-26.; Annual Meeting of the Society of Financial Econometrics, New York, June 20-23; Conference on Derivatives and Volatility, Financial Management Association, Chicago Board Options Exchange, November 9-10.

2018: European Finance Association Meeting, Warsaw, August 22-25.; Annual Meeting of the Society of Financial Econometrics, Lugano, June 12-14; Conference on Derivatives and Volatility, Financial Management Association, Chicago Board Options Exchange, November 8-9.; European Financial Management Association, Milano, June 27-30.

2019: European Finance Association Meeting, Carcavelos, Portugal, August 21-24.; Annual Meeting of the Society of Financial Econometrics, Shanghai, June 11-14.; European Financial Management Association Annual Meeting, Ponta Delgada, Island of S. Miguel, Portugal, June 26-29.

INTERNAL SERVICE

2006-2008: Chairman of the PhD program committee, Department of Economics, University of St. Gallen.

2010-15: Director of the PhD program committee for Quantitative Methods, Faculty of Economics, USI.

2016-: Director of the SFI PhD program at the University of Geneva.

CONFERENCES AND SEMINAR PRESENTATIONS

Please, see the webpage: <http://www.people.usi.ch/trojanif/talks.htm>

RECENT CONSULTING ACTIVITIES

2016: "The historical risk-return trade-offs of illiquid assets", research project on the valuation of illiquid asset classes for Natixis Asset Management.

2018: "Consumer Protection and the Design of the Default Option of a Pan-European Pension Product"; research project on a pan-European pension fund product for the European Fund and Asset Management Association (EFAMA).

ENTREPRENEURIAL PROJECTS

Co-founder and president of Alphacruncher AG, a digital company specialized in data science innovations for research and teaching, which recently launched the knowledge creation cloud Nuvolos. Nuvolos brings the best of data, code and scientific applications together in a simple to use browser-based interface. In the classroom setting, it provides an unparalleled simplicity in managing synchronized environments between educators and students, allowing all participants to focus on the content instead of technical issues. Nuvolos also empowers researchers, by allowing institutions to host all of their subscription datasets, making them available to affiliated members and providing them with a strong basis for their computational needs, all immediately accessible from a browser.

PUBLICATIONS IN ACADEMIC JOURNALS (MAJOR ONES HIGHLIGHTED IN BOLD)

- [1] Robust Inference with GMM Estimators, **Journal of Econometrics**, 2001, 101, 37–69 (with E. Ronchetti).
- [2] Short-Term Volatility Timing Reduces Downside Risk, International Journal of Finance, 2001, 13, Nr. 2, 1794–1825 (with G. Barone Adesi and P. Gagliardini).
- [3] A Note on Robustness in Merton's Model of Intertemporal Consumption and Portfolio Choice, Journal of Economic Dynamics and Control, 2002, 26, 423–435 (with P. Vanini).
- [4] Robust GMM Analysis of Models for the Short Rate Process, Journal of Empirical Finance, 2003, 10, 373–397 (with R. Dell'Aquila and E. Ronchetti).
- [5] A Geometric Approach to Multiperiod Mean Variance Optimization of Assets and Liabilities, Journal of Economic Dynamics and Control, 2004, Volume 28, 1079–1113 (with M. Leippold and P. Vanini).
- [6] Robustness and Ambiguity Aversion in General Equilibrium, Review of Finance, 2004, 279–324, (with P. Vanini).
- [7] Robust Efficient Method of Moments, **Journal of Econometrics**, 2005, 128, 69–97 (with C. Ortelli).
- [8] Optimal Conditionally Unbiased Bounded-Influence Inference in Dynamic Location and Scale Models, **Journal of the American Statistical Association**, 2005, 100, 628–641 (with L. Mancini and E. Ronchetti).
- [9] Robust GMM Tests for Structural Breaks, **Journal of Econometrics**, 2005, 129, 1-2, 139–182 (with P. Gagliardini and G. Urga).
- [10] Estimating and Predicting Multivariate Volatility Thresholds in Global Stock Markets, Journal of Applied Econometrics, 2006, 21, 345–369 (with F. Audrino).
- [11] Equilibrium Impact of Value-at-Risk Regulation, Journal of Economic Dynamics and Control, 2006, 30, 1277–1313 (with M. Leippold and P. Vanini).
- [12] Accurate Short Term Yield Curve Forecasting Using Functional Gradient Descent, Journal of Financial Econometrics, Fall 2007, 5, 591–623 (with F. Audrino).

- [13] Learning and Asset Prices under Ambiguous Information, **Review of Financial Studies**, 2008, 21, 2565–2597 (with M. Leippold and P. Vanini).
- [14] Asset Prices with Locally-Constrained-Entropy Recursive Multiple Priors Utility, *Journal of Economic Dynamics and Control*, November 2008, Volume 32, Issue 11, 3695–3717 (with A. Sbuelz).
- [15] Ambiguity Aversion and the Term Structure of Interest Rates, **Review of Financial Studies**, October 2009, 22, 4157–4188 (with P. Gagliardini and P. Porchia).
- [16] Limits of Learning About a Categorical Latent Variable under Prior Near-Ignorance, *International Journal of Approximate Reasoning*, April 2009, Volume 50, Issue 4, 597–611 (with A. Piatti, M. Hutter and M. Zaffalon).
- [17] Multiperiod Mean-Variance Efficient Portfolios with Endogenous Liabilities, *Quantitative Finance*, October 2009, 1469–1488 (with M. Leippold and P. Vanini).
- [18] Correlation Risk and Optimal Portfolio Choice, **Journal of Finance**, February 2010, Volume 65, Issue 1, 393–420 (with A. Buraschi and P. Porchia).
- [19] Infinitesimal Robustness for Diffusions, **Journal of the American Statistical Association**, June 2010, 703–712 (with D. La Vecchia).
- [20] A General Multivariate Threshold GARCH Model with Dynamic Conditional Correlations, *Journal of Business and Economic Statistics*, 2011, 138–149 (with F. Audrino).
- [21] Robust Value at Risk Prediction, *Journal of Financial Econometrics*, 2011, 281–313 (with L. Mancini).
- [22] Robust Subsampling, **Journal of Econometrics**, 2012, Volume 167, Issue 1, 197–210 (with L. Camponovo and O. Scaillet).
- [23] Higher Order Infinitesimal Robustness, **Journal of the American Statistical Association**, 2012, Volume 107, Issue 500, 1546–1557 (with D. La Vecchia and E. Ronchetti).
- [24] When Uncertainty Blows in the Orchard: Comovement and Equilibrium Volatility Risk Premia, **Journal of Finance**, 2014, Volume 69, Issue 1, February, 101–137 (with A. Buraschi and A. Vedolin).
- [25] Economic Uncertainty, Disagreement, and Credit Markets, **Management Science**, 2014, Volume 60 Issue 5, 1281–1296 (with A. Buraschi and A. Vedolin).
- [26] When There is No Place to Hide: Correlation Risk and the Cross-Section of Hedge Fund Returns, **Review of Financial Studies**, 2014, 27 (2), 581–616 (with A. Buraschi and R. Kosowski).
- [27] Comments on: Nonparametric Tail Risk, Stock Returns and the Macroeconomy, *Journal of Financial Econometrics*, 2017, Volume 15, Issue 3, 377–387 (with L. Camponovo and O. Scaillet).
- [28] (Almost) Model-Free Recovery, **Journal of Finance**, 2019, Volume 74, Issue 1, 323–370 (with P. Schneider).
- [29] Divergence and the Price of Uncertainty, *Journal of Financial Econometrics*, 2019, Volume 17, Issue 3, 341–396 (with P. Schneider).
- [30] Dividend Growth Predictability and the Price Dividend Ratio, **Management Science**, 2020, Volume 66, Issue 1, 130–158 (with I. Piatti).
- [31] Model-Free International SDFs, **Journal of Finance**, 2020, forthcoming (with M. Sandulescu and A. Vedolin).
- [32] The Price of the Smile and Variance Risk Premia, **Management Science**, 2020, forthcoming (with P. Gruber and C. Tebaldi).

WORKING PAPERS AND WORK IN PROGRESS

- [1] Variance Covariance Orders and Median Preserving Spreads (2009, with S. Malamud).
- [2] Asset Pricing with Matrix Jump Diffusions (2008, with M. Leippold).
- [3] Robust Resampling Methods for Time Series (2013, with L. Camponovo and O. Scaillet).
- [4] Ambiguity and Reality (2015, with J. Wrampelmeyer and C. Wiehenkamp).
- [5] Predictability Hidden by Anomalous Observations (2014, with L. Camponovo and O. Scaillet).

- [6] Predictable Risks and Predictive Regression in Present Value Models (2017, with I. Piatti).
- [7] Changes You Can Deal With? Robust Hedge Fund Exposures and Alphas (2014, with L. Camponovo and A. Popescu).
- [8] Fear Trading (2015, with P. Schneider).
- [9] On the Nature of Jump Risk Premia (2020, with P. Orlowski and P. Schneider).
- [10] Arbitrage Free Dispersion (2019, with P. Orlowski and A. Sali).
- [11] Smart Stochastic Discount Factors (2019, with S. Korsaye and A. Quaini).
- [12] The Global Factor Structure of Exchange Rates (2020, with S. Korsaye and A. Vedolin).
- [13] Information-Theoretic Recovery (2020, with S. Korsaye, A. Quaini and A. Vedolin).
- [14] Robust Implied Moments and Expected Return Bounds (2020, with O. Bondarenko and P. Schneider).
- [15] A General Machine Learning Approach for High-Dimensional Asset Pricing with Frictions (2020, with S. Scheidegger).