

## CURRICULUM VITAE

Fabio Trojani

### PERSONAL DATA

Birth: August 29, 1965

Nationality: Swiss

Family: Married, 1 Child

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Web Page: <http://www.people.usi.ch/trojanif/>

### EDUCATION

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

**1997:** Ph. D. in Econometrics/Finance, University of Zurich, "From Uncovered Interest Rate Parity Towards the Identification of the Dynamics of Exchange Rates Risk Premia". Thesis supervisors: Prof. H. Garbers, University of Zurich, Switzerland, and Prof. H. Geman, University Paris IX Dauphine and ESSEC, France.

### EMPLOYMENT

**1991-1997:** Assistant in Econometrics, Institute for Empirical Research in Economics, University of Zurich,

**1996:** Assistant in Statistics/Mathematics, University of Lugano (USI), Switzerland.

**1997-2000:** Maître assistant in Statistics/Econometrics, USI.

**2000-2004:** Assistant professor in Statistics-Econometrics-Quantitative Finance, USI, Grant of the Swiss National Science Foundation.

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

**2005-2013:** Head of project A3, "New Methods in Theoretical and Empirical Asset Pricing", inside the NCCR FINRISK "Financial Valuation and Risk Management".

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

**2009-2015:** Professor of Statistics, University of Lugano, Switzerland (on leave).

**2015-:** Professor of Finance, University of Geneva, Switzerland.

**2013-:** Head of SFI research project, "Term Structures and Cross-Sections of Asset Risk Premia".

### LANGUAGES

Italian, french, german, english.

### 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).

**2013-2016:** Higher Order Robust Resampling and Multiple Testing Methods, SNF research project, CHF 598'950 (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.

**2006:** Ranked 62th in the Handelsblatt Ranking of the top 100 researchers in Economics since 2002 (<http://www.handelsblatt.com/news/Default.aspx>). The ranking includes all researchers of Economics Departments of German speaking universities in Austria, Germany and Switzerland.

**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.

**2014-:** Swiss Finance Institute Senior Chair.

**2014-:** Adjunct Professor, University Bocconi, Milan.

#### **RESEARCH INTERESTS**

Asset pricing and portfolio theory, term structure modelling, option pricing, credit risk, time series econometrics, financial econometrics, matrix-valued processes and applications to finance, robust statistics, theory and computation of asymptotic expansions.

#### **EDITORIAL ACTIVITY**

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

Co-Editor, Journal of Financial Econometrics, 2015-.

#### **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 Econometrics, Journal of Finance, Journal of Financial Econometrics, 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, 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**

Loriano Mancini (2004, Assistant Professor of Finance, EPFL, Switzerland), Paolo Porchia (2004, Assistant Professor of Finance, Instituto de Empresa, Madrid), 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 Professional University of Southern Switzerland), Lorenzo Camponovo (2009, Assistant Professor of Mathematics, University of St. Gallen), Anna Cieslak (Assistant Professor of Finance, Northwestern University, USA, 2011), Pavol Povala (Assistant Professor, Dept. of Economics, Mathematics and Statistics, Birbeck, University of London, UK, 2013), Ilaria Piatti (Assistant Professor of Finance, Said Business School, Oxford, UK, 2014), Peter Gruber, Piotrek Orłowski, Alexandru Popescu, Andras Sali, Mirela Sandulescu (in progress).

#### **EXTERNAL PHD COMMITTEE MEMBER**

Jan Wrampelmeyer: "Ambiguity, Illiquidity and Hedge Funds", 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.

### **ACADEMIC VISITOR**

**2001:** Tilburg University, the Netherlands, October 21-26, December 2-6.

**2002:** Cass Business School, London, September 2-7, December 2-7. University of Insubria, Varese, Italy, September-November.

**2003:** University of Insubria, Varese, Italy, February-March.

**2004:** University of Insubria, Varese, Italy, April-June.

**2005:** University of Insubria, Varese, Italy, April-June.

**2009-2011:** Collegio Carlo Alberto, Torino, Italy, November-December.

**2012-2013:** Imperial College Business School, London, November-January.

**2009-2014:** University Bocconi, Italy, October-November, April-May.

**2012-2014:** University of Geneva.

### **PUBLICATIONS IN ACADEMIC JOURNALS**

[1] Robust Inference with GMM Estimators, *Journal of Econometrics*, 101, 37-69 (with E. Ronchetti).

[2] Short-Term Volatility Timing Reduces Downside Risk, *International Journal of Finance*, 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*, 26, 423-435 (with P. Vanini).

[4] Robust GMM Analysis of Models for the Short Rate Process, *Journal of Empirical Finance*, 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*, Volume 28, 1079-1113 (with M. Leippold and P. Vanini).

[6] Robustness and Ambiguity Aversion in General Equilibrium, *Review of Finance*, 279-324, (with P. Vanini).

[7] Robust Efficient Method of Moments, *Journal of Econometrics*, 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*, 100, 628-641 (with L. Mancini and E. Ronchetti).

[9] Robust GMM Tests for Structural Breaks, *Journal of Econometrics*, 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*, Volume 50, Issue 4, April 2009, 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*, Volume 65, Issue 1, February 2010, 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 (with L. Camponovo and O. Scaillet), *Journal of Econometrics*, 2012, Volume 167, Issue 1, 197-210.
- [23] Higher Order Infinitesimal Robustness (with D. La Vecchia and E. Ronchetti), *Journal of the American Statistical Association*, 2012, Volume 107, Issue 500, 1546-1557.
- [24] When Uncertainty Blows in the Orchard: Comovement and Equilibrium Volatility Risk Premia (with A. Buraschi and A. Vedolin), *Journal of Finance*, 2014, Volume 69, Issue 1, February, 101-137.
- [25] Economic Uncertainty, Disagreement, and Credit Markets (with A. Buraschi and A. Vedolin), *Management Science*, 2014, Volume 60 Issue 5, 1281-1296.
- [26] When There is No Place to Hide: Correlation Risk and the Cross-Section of Hedge Fund Returns (with A. Buraschi and R. Kosowski), *Review of Financial Studies*, 2014, 27 (2), 581-616

#### **WORKING PAPERS**

- [1] Variance Covariance Orders and Median Preserving Spreads (with S. Malamud).
- [2] Asset Pricing with Matrix Jump Diffusions (with M. Leippold).
- [3] Robust Resampling Methods for Time Series (with L. Camponovo and O. Scaillet).
- [4] Ambiguity and Reality (with J. Wrampelmeyer and C. Wiehenkamp).
- [5] Robust Predictive Regression (with L. Camponovo and O. Scaillet).
- [6] The Price of the Smile and Variance Risk Premia (with P. Gruber and C. Tebaldi).
- [7] Predictability Hidden by Anomalous Observations (with L. Camponovo and O. Scaillet).
- [8] Dividend Growth Predictability and the Price Dividend Ratio (with I. Piatti).
- [9] Predictable Risks and Predictive Regression in Present Value Models (with I. Piatti).
- [10] Changes You Can Deal With? Robust Hedge Fund Exposures and Alphas (with L. Camponovo and A. Popescu).
- [11] Divergence and the Price of Uncertainty (with P. Schneider).
- [12] Fear Trading (with P. Schneider).
- [13] Realized Jump Premia (with P. Orłowski and P. Schneider).
- [14] A Theory of Arbitrage Free Dispersion (with P. Orłowski and A. Sali).
- [15] Option Returns and Dynamic Risk Premia: a Direct Approach (with P. Orłowski and A. Sali).

## **PUBLICATIONS IN REFEREED PRACTITIONERS JOURNALS**

[1] A Note on the Three-Portfolios Matching Problem, *European Financial Management Journal*, 2003, Vol. 9, 1 March (with P. Vanini and L. Vignola).

## **REFEREED BOOK CHAPTERS**

[1] A Review of Perturbative Approaches for Robust Optimal Portfolio Problems, 2002, "Computational Methods in Decision-Making, Economics and Finance", Kluwer Applied Optimization Series (with P. Vanini).

[2] Robust Efficient Method of Moments Estimation, 2004, in: "Theory and Applications of Recent Robust Methods", M. Hubert, G. Pison, A. Struyf and S. Van Aelst eds., Series: Statistics for Industry and Technology, Birkhauser, Basel, p. 271-282 (with C. Ortelli).

## **PROCEEDINGS**

[1] Robust Statistical Analysis of Financial Models for the Short Term Rate, *Bulletin of the International Statistical Institute*, 2001, 53rd ISI Session Proceedings.

[2] Optimization of Assets and Liabilities, *Proceeding of the International Scientific School "Modelling and Analysis of Safety, Risk and Quality in Complex Systems"*, 2002, Saint-Petersburg, Russian Foundation of Fundamental Research (with M. Leipold and P. Vanini).

[3] Limits of Learning from Imperfect Observations under Prior Ignorance: the Case of the Imprecise Dirichlet Model, in: Cozman, F. G., Nau, B., Seidenfeld, T. (Eds), *ISIPTA '05: Proceedings of the Fourth International Symposium on Imprecise Probabilities and Their Applications*, 2005 (with A. Piatti and M. Zaffalon).

## **BOOK REVIEWS**

[1] *Statistics and Finance* (by D. Ruppert), Springer Texts in Statistics, 2004.

[2] *Semiparametric Regression for the Applied Econometrician* (by A. Yalchew), *Journal of the American Statistical Association*, 2006.

## **TEACHING**

### **University of Lugano**

Statistics I, 2010- (first year undergraduate course).

Probability II, 2011- (graduate course, Master level).

Probability, 2011- (graduate course, PhD level).

Time Series Analysis, 2011- (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**

Continuous Time Finance, 2009- (graduate course, PhD level).

### **University of Geneva**

Asset Pricing, 2012-2014 (graduate course, Master level).

Numerical Methods in Finance, 2013-2014 (graduate course, Master 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).

#### **University of Insubria**

Asset Pricing, Introduction to Probability Theory and Stochastic Processes for Finance, 2002-2003 (third year undergraduate courses).

Continuous-Time Yield Curve Models, 2004. Asset Pricing, 2005 (graduate courses, Master level).

#### **Cass Business School**

Probability Theory and Stochastic Processes for Finance, 2002 (graduate course, PhD level).

#### **Professional University of Southern Switzerland (SUPSI)**

Portfolio Theory and Asset Pricing, 1997-2004. Derivative Securities, 2000. Statistics, 1998 (first-fourth year undergraduate courses).

#### **University of Zurich**

Mathematics and Stochastics for Econometricians, 1997 (second-fourth year undergraduate courses).

#### **European Finance Training Program for Financial Analysts**

Fixed Income Securities, Futures Contracts and International Economics, 1997 (courses for practitioners).

### **ORGANISATION OF SEMINARS AND WORKSHOPS**

**2001:** European Courses in Advanced Statistics, "Bayesian Statistics and Financial Econometrics", USI, Lugano, October 8-12.

**1998-2004:** Doctoral finance seminar at USI.

**2005-2006:** Doctoral finance seminar at the University of St. Gallen.

**2006:** International Workshop "Risk Management: from Basel II to Basel III", Monte Verità, Ascona, Switzerland, February 26-March 3, 2006.

**2007:** Annual Meeting of the Swiss Society of Economics and Statistics, University of St. Gallen, Switzerland, March 22-23.

### **PROGRAM COMMITTEES**

#### **2003**

International Symposium on Imprecise Probabilities and Their Applications, Lugano, Switzerland, July 14-17.

#### **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.

**INTERNAL SERVICE**

**2004-2006:** Member of the PhD program committee, Department of Economics, University of St. Gallen.

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

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

**PAPERS ACCEPTED AT CONFERENCES AND SEMINAR PRESENTATIONS**

See the webpage: <http://www.people.usi.ch/trojanif/talks.htm>

**REFERENCES**

Available on request.



Working Paper | We analyze theoretically and empirically the implications of heterogeneous information for equilibrium asset pricing and portfolio choice. Our | Find, read and cite all the research you need on ResearchGate.Â Abstract The goal of this paper is to assess, for the first time, the empirical im- pact of â€Keynesâ€™™ beauty contestâ€™, or â€higher order beliefsâ€™, on asset price volatility. The paper shows that heterogeneous expectations induce higher order beliefs and that asset pricing models with heterogeneous expectations theoretically generate more volatility than rational expectation models. The paper also explains how, with some assumptions on the distribution of public and private information, a model with higher order beliefs can be empiri- cally tested.