Curriculum Vitae – Peter H. Gruber

Personal Information

Institute of Finance
Università della Svizzera italiana
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Research Interests Asset Pricing, Financial Econometrics, Numerical Methods, High Performance Computing

Current Position

Università della Svizzera italiana, Lugano 2014-ongoing
Postdoctoral research associate, SNF project "Higher order robust resampling and multiple testing methods", project leader: Prof. Fabio Trojani

Education

Università della Svizzera italiana, Lugano 2015/06
PhD in Economics, "Essays on Variance Risk", Thesis Committee: Prof. David Bates (Iowa), Prof. Patrick Gagliardini (Lugano), Prof. Markus Leippold (Zürich), Prof. Fabio Trojani (Lugano, supervisor)

University of St. Gallen 2005-2007
PhD courses in Economics and Finance (PEF-program)

University of St. Gallen 2005/11
M.A. in Quantitative Economics and Finance, "Market Expectations of Short Interest Rates", supervisor: Prof. Paul Söderlind

CERN, Geneva and Vienna University of Technology 2001/09
PhD in Particle Physics, "Ionization Cooling for a Neutrino Factory", supervisors: Prof. Heinz Oberhummer, Dr. Alessandra Lombardi

Vienna University of Technology 1998/09
MSc Physics (Diplom-Ingenieur) "Der Einfluss der Lage der 7654keV-Resonanz von ^{12}C auf die Produktion von Kohlenstoff im Universum", supervisor: Prof. Heinz Oberhummer

Working Papers

Three Make a Dynamic Smile – Unspanned Skewness and Interacting Volatility Components in Option Valuation, (2010), joint work with R. Reno, C. Tebaldi and F. Trojani, `http://ssrn.com/abstract=1786408`

The Price of the Smile and Variance Risk Premia, (2015), joint work with C. Tebaldi and F. Trojani, swiss:finance:institute Research Paper No. 15-36, submitted to Review of Financial Studies, `http://ssrn.com/abstract=2648288`

Eliciting a Smile – Numerical Methods for Option Pricing with Matrix Affine Jump Diffusions, (2015), `http://www.people.usi.ch/gruberp/ElicitingASmile.pdf`

Presentations

The Price of the Smile and Variance Risk Premia

Workshop on Skewness, Heavy Tails, Market Crashes and Dynamics, Society for Financial Econometrics and Institute for New Economic Thinking, 2014, Cambridge, UK; Finance Seminar at the University L. Bocconi, 2014, Milan; Research Days of the swiss:finance:institute, 2014 Gerzensee, Switzerland; 7th World Congress of the Bachelier Finance Society, 2014, Brussels; Annual meeting of the French Finance Society 2015, Paris*; Society for Financial Econometrics annual meeting 2016, Hong Kong*; European Finance Association, 2016, Oslo*

Three Make a Dynamic Smile – Unspanned Skewness and Interacting Volatility Components in Option Valuation

Seminar at the Vienna University of Technology, 2010, Vienna; 5th World Congress of the Bachelier Finance Society, 2010, Toronto, Canada; European Finance Association Annual Meeting, 2010, Frankfurt, Germany*; Midwestern Finance Association Annual Meeting, 2011, Chicago; Eastern Finance Conference, 2011, Savannah, GA

Seven golden steps towards implementing Matrix Affine Jump Diffusion models

Research Seminar, Università della Svizzera italiana, 2008, Lugano

Option pricing with matrix affine jump diffusions

PEF Research Seminar, 2008, St. Gallen; finrisk Research Day, 2008, Gerzensee, Switzerland; X. Workshop on Quantitative Finance, 2009, Milan

* presentation given by a co-author

Discussions

"A Market-Based Funding Liquidity Measure" by Zhuo Chen and Andrea Lu, 13^{th} International Paris Finance Meeting, 2015

"Do stylized facts of equity-based volatility indices apply to fixed-income volatility indices? Evidence from the US Treasury market" by R. Lopez, AFFI Annual Meeting, 2015, Cergy

"The Information Content of Option Demand" by K. Kehrle et al., 9th finrisk Resarch Day, 2012, Gerzensee, Switzerland

"Foreign currency returns and systematic risks" by V. Galsband et al., Workshop on Financial Determinants of Exchange Rates, 2011, Banca d'Italia, Rome

"Recovering Nonlinear Dynamics from Option Prices" by A. Engulatov et al., 10th Swiss Doctoral Workshop in Finance, 2011, Gerzensee, Switzerland

"Does Risk-Neutral Skewness Predict the Cross-Section of Equity Option Portfolio Returns?" by T. Bali et al., Eastern Finance Conference, 2011, Savannah, GA

"VIX Dynamics with Stochastic Volatility of Volatility" by A. Kaeck et al., Midwestern Finance Association Annual Meeting, 2011, Chicago

"Correlation risk and the term structure of interest rates" by A. Buraschi et al., Financial Markets and Real Activity, 2008, Paris, France

"Joint model of corporate default intensities and macroeconomic dynamics" by V. Sahakyan et al., 7th Swiss Doctoral Workshop in Finance, 2008, Gerzensee

"Benchmarks in Aggregate Household Portfolios" by Pascal St-Amour, NCCR finrisk Research Day, 2007, Gerzensee, Switzerland

"A small investor model for the limit order book and some applications" by Jörg Osterrieder, NCCR finrisk Workshop, 2006, Gerzensee, Switzerland

Publications Didactics

P. Gruber and the ESPACE Collaboration, (2000), **The LTWO paradigm – a general theory for IT-based education systems** *Proceedings of the 5th Workshop on Multimedia in Physics Teaching and Learning, Vienna, 8th-11th October 2000*, Editor: H. Oberhummer

Publications Physics (selected)

A. Blondel et al., (2004), **CFA/CERN Studies of a European Neutrino Factory Complex** *CERN Yellow Report*, CERN-2004-002. (Editor for the part on machine physics)

J. Norem et al., (2003), **Dark Current and X Ray Measurements of an 805 MHz Pillbox Cavity** *Proceedings of the International PAC, Portland (USA)*, IEEE

P. Gruber, J. Torun, (2003), **Beam Photography – a Method to Create a 2D Image of Dark Current** *Proceedings of the International Particle Accelerator Conference (PAC), Portland (USA)*, IEEE

P. Gruber, (2003), **Normalized Emittance in the Case of Large Momentum Spreads** *J. Phys. G: Nucl. Part. Phys.* 29

P. Gruber (Ed.), (2002), **The Study of a European Neutrino Factory Complex** *CERN/PS/2002-080 (PP)*

P. Gruber and E. Mckigney, (2001), **A First Study of a Scintillating Fibre Detector for a Muon Ionization Cooling Experiment** *CERN-NUFACT-079, IC/HEP-01*

A. Blondel et al., (2000), **Neutrino Factory. Beam and Experiments: Summary** *Nucl. Instruments Methods Phys. Res., A* : 451

Teaching experience

Applied Numerical Methods with MATLAB and R

- *Solving Economics and Finance Problems with MATLAB*, (course design, responsible, master level, English, 3 ECTS credits, 2005-ongoing), University of St. Gallen, ca. 80 students/yr
- *An introduction to MATLAB*, (course design, responsible, bachelor level, English, 2 ECTS credits, 2014-ongoing), University of St. Gallen, ca. 30 students/yr
- *Informatica II – Numerical Methods with R* (course design, co-responsible, bachelor level, English, 6 ECTS, 2014-ongoing), University of Lugano, 40 students/yr
- *Advanced Numerical methods with MATLAB*, (course design, responsible, master level, English, 3 ECTS credits, fall 2015), University of St. Gallen, ca. 10 students
- *Numerical methods with MATLAB*, (course design, co-responsible, master level, English, 6 ECTS credits, spring 2013 and 2014), University of Geneva, ca. 20 students/yr

Mathematics and Econometrics

- *Financial Econometrics* (course assistant, master level, English, 3 ECTS credits, 2011-2013), Univesità della Svizzera italiana, ca. 35 students/yr
- *Elementi di Matematica per le Scienze della Comunicazione* (mathematics for communication sciences, responsible, bachelor level, Italian, Univesità della Svizzera italiana, 3 ECTS credits, 2010-2011), ca. 150 students/yr
- *Ricupero di Matematica per le Scienze della Comunicazione* (repetition of highschool mathematics for communication sciences, responsible, bachelor level, Italian, Univesità della Svizzera italiana, 2 hours/week, 2010-2011), ca. 150 students/yr
- *Linear Models and Variance Analysis* (course design, responsible, bachelor level, English, 2 ECTS credits, 2007-2008), University of St. Gallen, ca. 15 students/yr

Asset pricing

- *Asset pricing* (course assistant, master level, English, 3 ECTS credits, fall 2014 and 2015), University of Geneva, ca. 12 students/yr

Economics

- *Übungen Makroökonomie II*, (tutor, bachelor level, German, 3 ECTS credits, 2005-2014), University of St. Gallen, ca. 100 students/yr

Physics

- *Arbeitsgemeinschaft Rechenübungen für Technische Physiker*, (applied physics calculus, tutor, German, 2 hours/week, 1991-94), University of Technology Vienna, ca. 35students/yr

Lecture Notes

Linear Models and Variance Analysis, (2009), 113 pages

Solving Economics and Finance Problems with MATLAB, (2012), 200 pages

Professional Experience

Università della Svizzera italiana, Lugano 2008-ongoing
Research associate, NCCR-Finrisk project, project leader: Prof. Fabio Trojani

University of St. Gallen, Department of Economics 2004/11-2005/12
Assistant in Monetary and Real Estate Economics to Prof. Jörg Baumberger

CERN, Geneva 2001/09-2003/08
Research Fellow, Neutrino Factory Working Group, simulations with Fortran, development of a muon cooling experiment, co-editor of a CERN report, supervision of two students

Awards and Grants

Swiss Finance Institute Best Discussant Award	2011
Research grant of the CAREFIN foundation (EUR 3.000,–)	2009
CERN Fellowship	2001
CERN Austrian Doctoral Student Programme Scholarship	1999

Community Service

Student representative, program committee of the
PhD program in Economics and Finance (PEF), HSG 2006-2008

Memberships of conference program committees
European Finance Association, annual meeting
French Finance Association (AFFI), Paris December Finance meeting

Referee Reports
European Journal of Finance
Journal of Empirical Finance
Economic Notes

swiss:finance:instute
Guidelines for Discussions at the Annual Swiss Doctoral Workshop in Finance

Languages

German (native speaker), English (teaching), Italian (teaching), French

MATLAB (teaching), R (teaching), MySQL, PHP, Python