

# Paolo Guasoni

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## EMPLOYMENT

Associate Professor	2009 –
Assistant Professor	2003 – 2009
Boston University, Department of Mathematics and Statistics	
Researcher	2000 – 2003
University of Pisa, Department of Mathematics	
Officer	1999 – 2000
Bank of Italy, Research Department	

## ACADEMIC TRAINING

Ph.D. in Mathematics	Scuola Normale Superiore, Pisa	2002
M.A. in Mathematics of Finance	Columbia University	1998
Diploma in Mathematics	Scuola Normale Superiore, Pisa	1997
Laurea (B.S.) in Mathematics	University of Pisa	1996

## AWARDS

<a href="#">Flows and Fees</a>	2011
NSF Grant DMS-1109047	PI, 237,000 USD
<a href="#">Risk, Ambiguity and the Long Run</a>	2008
NSF Grant DMS-0807994	PI, 250,000 USD
<a href="#">Large Deviations and Applications to Finance</a>	2005
NSF Grant DMS-0532390	PI, 193,000 USD

## PRIZES

AMASES Prize (Association for Mathematics in Social and Economic Sciences)	2004
Award for best single-author paper from a Ph.D. thesis.	
Bank of Italy	1996
<i>Giorgio Mortara</i> scholarship for graduate studies in Quantitative Finance.	

## SYNERGISTIC ACTIVITIES

Stokes Chair of Financial Mathematics	2009 –
Dublin City University, School of Mathematical Sciences	
Boston University	2006 – 2008
Associate Director, Mathematical Finance Program	
Centro di Ricerca Matematica "Ennio de Giorgi", Pisa	Apr – Jul 2002
Organizer of "Financial Markets: Mathematical, Statistical and Economic Analysis".	

## TEACHING

*Graduate:* Stochastic Calculus, Statistical Analysis of Financial Data, Stochastic Methods of Mathematical Finance, Introduction to Mathematical Finance, Introduction to Probability Theory. *Undergraduate:* Mathematics of Financial Derivatives, Elementary Probability, Calculus II, Introduction to Analysis II.

#### WORKING PAPERS (IN PREPARATION)

Cross-Impact and Principal Portfolios (with Marko Weber).

The Limits of Leverage: Trading Costs and Limited Returns (with Eberhard Mayerhofer).

Who Should Sell Stocks? (with Johannes Muhle-Karbe and Ren Liu).

Portfolio Choice with Liquid and Illiquid Assets (with Maxim Bichuch).

Consumption in Incomplete Markets (with Gu Wang).

Shortfall Aversion (with Gur Huberman and Dan Ren).

#### WORKING PAPERS (SUBMITTED)

[Arbitrage, Hedging and Optimality with Superlinear Frictions](#) (with Miklos Rasonyi).

[Robust Portfolios and Weak Incentives in the Long Run](#) (with Johannes Muhle-Karbe and Hao Xing).

[Dynamic Trading Volume](#) (with Marko Weber).

[High-Water Marks and Separation of Private Investments](#) (with Gu Wang).

[Fragility of Arbitrage and Bubbles in Diffusion Models](#) (with Miklós Rásonyi).

#### PUBLICATIONS IN PEER-REVIEWED JOURNALS

[The Incentives of Hedge Fund Fees and High-Water Marks](#) (with Jan Obłój).

*Mathematical Finance*, forthcoming.

[Abstract, Classic, and Explicit Turnpikes](#) (with Kostas Kardaras, Scott Robertson, and Hao Xing).

*Finance and Stochastics*, forthcoming.

[Long Horizons, High Risk-Aversion, and Endogenous Spreads](#) (with Johannes Muhle-Karbe).

*Mathematical Finance*, forthcoming.

[Transaction Costs, Trading Volume, and the Liquidity Premium](#)

(with Stefan Gerhold, Johannes Muhle-Karbe, and Walter Schachermayer).

*Finance and Stochastics*, forthcoming.

[Static Fund Separation of Long Term Investments](#) (with Scott Robertson).

*Mathematical Finance*, forthcoming.

[The Fundamental Theorem of Asset Pricing with Transaction Costs](#)

(with Emmanuel Lépinette and Miklós Rásonyi).

*Finance and Stochastics*, 16 (2012) no. 4 p. 741-777.

[Portfolios and Risk Premia for the Long Run](#) (with Scott Robertson).

*Annals of Applied Probability*, 22 (2012), no. 1, 239-284.

[Performance Maximization of Actively Managed Funds](#) (with Gur Huberman and Zhenyu Wang).

*Journal of Financial Economics*, 101 (2011), no. 3, 574-595.

[Relaxed Utility Maximization in Complete Markets](#) (with Sara Biagini).

*Mathematical Finance*, 21 (2011), no. 4, 703-722.

[The Fundamental Theorem of Asset Pricing for Continuous Processes under Small Transaction Costs](#)

(with Miklós Rásonyi and Walter Schachermayer).

*Annals of Finance*, 6 (2010), no. 2, 157-191

[Consistent Price Systems and Face-Lifting Pricing under Transaction Costs](#)

(with Miklós Rásonyi and Walter Schachermayer).

*Annals of Applied Probability*, 18 (2008), no. 2, 491-520

[Optimal Importance Sampling with Explicit Formulas in Continuous Time](#) (with Scott Robertson)

*Finance and Stochastics*, 12 (2008), no. 1, 1-19

[No Arbitrage with Transaction Costs, with Fractional Brownian Motion and beyond.](#)

*Mathematical Finance*, 16 (2006), no. 3, 569-582

[Asymmetric Information in Fads Models](#)

*Finance and Stochastics*, 10 (2006), no. 2, 159-177

### Super-replication and Utility Maximization in Large Financial Markets

(with Marzia De Donno and Maurizio Pratelli)

*Stochastic Processes and their Applications*, 115 (2005), no. 12, 2006-2022

### Necessary Conditions for the Existence of Utility Maximizing Strategies under Transaction Costs

(with Walter Schachermayer).

*Statistics and Decisions*, 22 (2004), no. 2, 153-170

### Optimal Investment with Transaction Costs and without Semimartingales

*Annals of Applied Probability*, 12 (2002), no. 4, 1227-1246 (Winner of AMASES Prize 2004)

### Risk Minimization under Transaction Costs

*Finance and Stochastics*, 6 (2002) no. 1, 91-113

### Mean-Variance Hedging with Stochastic Volatility Models

(with Francesca Biagini and Maurizio Pratelli)

*Mathematical Finance*, 10 (2000) no. 2, 109-123

### Mean-Variance Hedging with Random Volatility Jumps (with Francesca Biagini)

*Stochastic Analysis and Applications*, 20 (2002) No. 3, 471-494

Some Problems of Shape Optimization Arising in Stationary Fluid Motion (with Luigi Berselli)

*Advances in Mathematical Sciences and Applications*, 14 (2004) no. 1, 279-293

Shape Optimization Problems over Classes of Convex Domains (with Giuseppe Buttazzo)

*Journal of Convex Analysis*, 4 (1997) no. 2, 343-351

### CONFERENCE PROCEEDINGS

#### Portfolio Choice with Transaction Costs: a User's Guide (with Johannes Muhle-Karbe)

*Paris-Princeton Lectures on Mathematical Finance 2012*, forthcoming.

Importance Sampling with Basket Options (with Scott Robertson) *Wilmott*, Nov/Dec 2007

No Free Lunch under Transaction Costs for Continuous Processes *Seminar on Stochastic Analysis, Random Fields and Applications V: Centro Stefano Franscini, Ascona, May 2005 (Progress in Probability)*. Birkäuser. ISBN: 3764384573.

Excursions in the Martingale Hypothesis *Stochastic Processes and Applications to Mathematical Finance: Proceedings of the Ritsumeikan International Symposium*. World Scientific (2004), ISBN: 9812387781.

Estimating State Price Densities by Hermite Polynomials: Theory and Application to Italian Derivatives Market *Temi di Discussione del Servizio Studi, Banca d'Italia*. No. 507 (2004).

### TEACHING

*Graduate*: Stochastic Calculus, Statistical Analysis of Financial Data, Stochastic Methods of Mathematical Finance, Introduction to Mathematical Finance, Introduction to Probability Theory. *Undergraduate*: Mathematics of Financial Derivatives, Elementary Probability, Calculus II, Introduction to Analysis II.

### ADVISING

Ph.D. students: Scott Robertson (2009, Carnegie Mellon), Gu Wang (2013, University of Michigan), Dan Ren (2013, University of Dayton), Marko Weber (current).

Postdoc: Hao Xing (2010, London School of Economics), Andreas Hula (2012, UCL).

### PROFESSIONAL ACTIVITIES

Associate Editor for *Finance and Stochastics* (2012-).

Associate Editor for *European Journal of Finance* (2013-).

Associate Editor for *Finance SIAM Book Series in Financial Mathematics* (2013-).

Editor of *Asset Pricing Models* section for the *Encyclopedia of Quantitative Finance*.

Council Member of the Bachelier Society.

National Science Foundation: panelist in Mathematical Finance, reviewer for Probability, Statistics and Applied Mathematics, and for CAREER awards.

Referee for:

*Annali della Scuola Normale Superiore*  
*Annals of Applied Probability*  
*Annals of Finance*  
*Applied Mathematical Finance*  
*Decisions in Economics and Finance*  
*Electronic Communications in Probability*  
*Electronic Journal of Probability*  
*European Journal of Finance*  
*Finance and Stochastics*  
*IEEE Transactions on Automatic Control*  
*International J. of Theoretical and Applied Finance*  
*Journal of Applied Probability*  
*Journal of Computational Finance*  
*Journal of Monetary Economics*  
*Journal of Risk*  
*Management Science*

*Mathematical Finance*  
*Mathematics and Financial Economics*  
*Mathematics of Operations Research*  
*Math. Methods of Operations Research*  
*Operations Research*  
*Quantitative Finance*  
*Review of Economics and Statistics*  
*Review of Finance*  
*Review of Financial Studies*  
*SIAM J. of Control and Optimization*  
*SIAM J. of Financial Mathematics*  
*Statistics and Decisions*  
*Statistics and Probability Letters*  
*Stochastics*  
*Stochastic Processes and Applications*  
*Stochastic Systems.*

Reviewer for Mathematical Reviews, Zentralblatt MATH, and Wiley Economics and Finance books.  
Member of AMASES, American Finance Association, Bachelier Finance Society, INFORMS, SIAM.

#### INVITED TALKS 2000–2007

Séminaire Bachelier	CREST Paris	March	2006
OR Financial Engineering Seminar	Princeton University	December	2005
Workshop on Optimization in Finance	Univ. Coimbra, Portugal	July	2005
5 <sup>th</sup> Seminar in Stochastic Analysis	Centro Stefano Franscini, Ascona	June	2005
Workshop on Stochastic Analysis	Univ. Jyväskylä, Finland	May	2005
Invito alla Finanza Matematica	Univ. Roma II, Italy	June	2004
Probability Seminar	Columbia University	October	2003
Finance Seminar	Imperial College, London	May	2003
Symposium on Stochastic Processes	Ritsumeikan University, Japan	March	2003
Financial and Actuarial Mathematics Seminar	TU Vienna	June	2002
Variational Problems with Global Constraints	Université de Paris VI	April	2001
Seminar in Financial Mathematics	ETH Zurich	January	2000

#### SELECTED CONTRIBUTED TALKS

European Summer Symposium in Financial Markets	CEPR	July	2008
Second Conference on Hedge Fund Strategies	Imperial College, UK	December	2007
Portfolio Management and Derivatives	Lugano, Switzerland	May	2007
4 <sup>th</sup> World Congress of the Bachelier Finance Society	Tokyo, Japan	August	2006
3 <sup>th</sup> World Congress of the Bachelier Finance Society	Chicago	August	2004
1 <sup>th</sup> World Congress of the Bachelier Finance Society	Paris, France	July	2000

INVITED TALKS 2007 –

Lectures in Mathematical Finance	Scuola Normale Superiore, Pisa	May	2013
Risk and Stochastics Conference 2013	London School of Economics	May	2013
Financial Mathematics Seminar	King's College, London	May	2013
Stochastic Analysis and Finance Seminar	Humboldt University, Berlin	January	2013
De Finetti Risk Seminar	Bocconi University, Milan	January	2013
New Developments in Portfolio Choice	SIAM Annual Meeting	July	2012
Mathematics Summer School 2012	CoLab, UT Austin Portugal	July	2012
Probability, Control, and Finance	Columbia University	June	2012
Mathematical Finance Seminar	Imperial College	March	2012
AMASES Annual Meeting	University of Pisa	September	2011
Workshop on Financial Markets with Frictions	ICIAM, Vancouver	July	2011
Stochastic Analysis in Finance and Insurance	University of Michigan	May	2011
Seventh Seminar on Stochastic Analysis	Centro Stefano Franscini	May	2011
Stochastic Analysis in Finance and Insurance	MFO Oberwolfach, Germany	January	2011
OR Financial Engineering Seminar	Princeton University	September	2010
Analysis, Stochastics, and Applications	University of Vienna	July	2010
Seminar on Hedge Funds	UK Financial Services Authority	April	2010
Finance Seminar	EPFL Lausanne	March	2010
Seminar on Risk and Stochastics	London School of Economics	February	2010
Foundations of Mathematical Finance	Fields Institute	January	2010
North British Probability Seminar	University of Edimburgh	November	2009
Quantitative Finance Seminar	SUNY Stony Brook	November	2009
33 <sup>rd</sup> Conference on Stochastic Processes	TU Berlin	July	2009
15 <sup>th</sup> INFORMS Applied Probability Society	Cornell University	July	2009
Mathematical Finance Seminar	Oxford University	June	2009
Séminaire Bachelier	Paris	May	2009
Financial Mathematics Seminar	UC Santa Barbara	May	2009
Non-Semimartingales in Mathematical Finance	TU Helsinki	May	2009
Financial Mathematics Seminar	Rutgers University	April	2009
2 <sup>nd</sup> SIAM Conference Financial Mathematics	Rutgers University	November	2008
2 <sup>nd</sup> Western Conference Mathematical Finance	University of Texas at Austin	October	2008
Financial Mathematics Seminar	University of Michigan	October	2008
Conference on Stochastic Processes	Università di Torino, Italy	July	2008
Sixth Seminar on Stochastic Analysis	Centro Stefano Franscini, Ascona	May	2008
Conference on Monte Carlo Methods	Brown University	April	2008
Mathematical Finance Workshop	Hitotsubashi University, Tokyo	March	2008
Stochastic Analysis in Finance and Insurance	MFO Oberwolfach, Germany	February	2008
Special Session on Portfolio Risk	AMS Meeting, San Diego	January	2008
4 <sup>th</sup> CCCP Mathematical Finance Workshop	Princeton University	November	2007
Financial Engineering Seminar	Cornell University	October	2007
Financial Mathematics Seminar	UT Austin	March	2007
Finance Seminar	Columbia Business School	February	2007