

Elise Payzan Le Nestour

PhD Candidate in Finance
Swiss Finance Institute at EPFL
French citizenship

Swiss Finance Institute at EPFL
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Visiting Caltech from January 2010 on

Research Fields

Primary : Financial economics

Formal modeling of learning in financial markets

Also: Experimental economics & finance, neurofinance

Models of decision-making under uncertainty, experimental testing of these models, exploration of the corresponding neurological and evolutionary foundations

Teaching Fields

Financial Economics, Introduction to Finance, Options, Behavioral Finance & Economics, Experimental Economics, Empirical Analysis (applied econometrics and microeconomics), Neuroeconomics

Current

PhD Finance (first part): London School of Economics, Sept 2005 - Aug 2007

Completed all courses within the PhD program in 1 year instead of 2 and then started my research work under the supervision of Prof. Dimitri Vayanos.

PhD Finance (continued): Swiss Finance Institute , Sept 2007 - Oct 9th, 2009 (Defense)

Joined (with the full understanding of my LSE supervisors) the SFI PhD program to pursue my research under the supervision of Prof. Peter Bossaerts.

Thesis Committee:

Peter Bossaerts, Colin Camerer, Giorgio Coricelli, Julien Hugonnier, Semyon Malamud, Antonio Rangel

NCCR Finrisk Visiting Scholar at Caltech, from January 2010 on

Education

Princeton University, Department of Economics: Visiting Student, 2004-2005

Paris School of Economics (Delta-EHESS): MSc Economics, 2002-2004

Ecole Nationale de la Statistique et de l'Administration Economique (ENSAE, Paris):

Ingénieur-Statisticien, 2002-2004

Ecole Normale Supérieure d'Ulm, Paris: Élève Professeur-Stagiaire, 2001-2006

Fellowships

Laboratory for Decision Making under Uncertainty (EPFL): Research Assistant, 2007-2010

NCCR Finrisk: PhD Fellowship, 2009-2010

LSE Research Studentship scheme: Full Fellowship, 2005-2007

Princeton University: Charlotte Elisabeth Procter Fellowship, 2004-2005

École Normale Supérieure: Full Salary, funded by the French State for 4 years of study, from 2001

Research Papers

- **Is Rational Asset Valuation in Unstable Financial Environments Possible? Experimental Evidence Based on the Bandit Problem (Job Market Paper)**

An important issue in financial decision-making is the way people process new information. Prior studies have questioned the ability of people to use Bayes' law in decision-making. None of those studies however probe situations similar to those typically encountered in financial markets. Here we explore, both theoretically and empirically, whether agents can apply Bayes' law in a finance environment, captured as a nonstationary bandit task - the "Boardgame". In it, we isolated the instability encountered in modern financial markets in the form of sudden changes ("jumps") in the return processes. From subjects' choices, we determined whether their learning in the task reflected optimal Bayesian inference instead of simple "Reinforcement Learning." In contrast to the latter win-keep lose-switch heuristic, the Bayesian models accommodate nonstationarity either by tracking the probability of a jump or by dynamically adjusting the memory of learning through jump detection. Both Bayesian models fitted our data better than the Reinforcement Learning model did. This result suggests that agents may be better fit to learn in financial markets than previously thought. More broadly, it suggests that humans are wired to face very complex settings, and should prompt a reexamination of the scope of the bounded rationality paradigm.

[Paper/Slides](#).

- **Hierarchical Versus Forgetting Bayes: Probabilistic Learning under Changing Probabilities (submitted)** (with P. Bossaerts) This paper examines with simulated data the learning efficiency and the fitness of the behavioral models introduced in the job market paper.
- **Risk, Estimation Uncertainty, and Unexpected Uncertainty: Bayesian Learning in Unstable Settings (submitted)** (with P. Bossaerts) This paper explores the neurological foundations of the behavior at work in the Boardgame experiment.

Teaching Experience

Swiss Finance Institute at EPFL:

- Teaching Assistant, Introductory Finance - MSc Financial Engineering, Fall & Spring 2008
- Teaching Assistant, Neuroeconomics - MSc Financial Engineering, Spring 2009
- Teaching Assistant, Game Theoretic Foundations of Market Microstructure Theory - MSc in Financial Engineering, Spring 2009

London School of Economics:

- Class Teacher, Principles of Finance - BSc Accounting and Finance, Fall & Spring 2007

Professional Activities

Presentations

- Paris Finance International Meeting, December 2009
- Swiss Finance Institute, Geneva, November 2009
- INSEAD, Fontainebleau Campus, October 2009
- London School of Economics, London, October 2009
- Paris School of Economics, Paris, October 2009
- Institute for Empirical Research in Economics, Zurich, October 2009
- Caltech, Pasadena, July 2009
- Swiss Finance Institute, Gerzensee Annual Meeting, June 2009
- CRETA workshop, Warwick, April 2009
- Institut des Sciences Cognitives, Lyon, March 2009
- Baylor College of Medicine, Houston, January 2009
- Behavioral and Experimental Economics Conference, Copenhagen, November 2008
- London School of Economics, London, December 2006
- Behavioral Economics Workshop, Budapest, July 2005
- Neuroscience and Social Decision-Making seminar, Princeton University, April 2005

Workshops

- Neurofinance Symposium, Zurich University, July 2007
- Statistical Parametric Mapping Short course, University College London, May 2007
- Stanford Summer School on Neuroeconomics, Stanford University, July 2006

Referee activities

- Review of Finance

Memberships

Econometric Society, American Economic Association, Society for Neuroeconomics

Consulting Experience

Academic Advisor for [Trader Psyches](#) (founded by Denise Shull): clients range from individual star traders to large hedge funds (August 2009 - present)

References

Peter Bossaerts

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