

Hayette GATFAOUI

CURRENT POSITIONS

Visiting Professor at Sapienza Università di Roma (Department of Statistics from 8 May to 8 Aug. 2022)

Associate professor of Finance at IÉSEG School of Management (from Sept. 2015).

Associate Researcher at the *Centre d'Economie de la Sorbonne* (CES), CNRS UMR-8174, University Paris 1 Panthéon-Sorbonne (from Feb. 2013).

Member of the Teaching & Learning Development Committee (TLDC) at IESEG School of Management (from Jan. 2017).

Coaching new adjunct professors supervising Master theses in Finance & Master thesis students in Finance (Theses quality, data analytics & techniques, from 2019).

PREVIOUS POSITIONS

2005-2015 Associate professor of Finance at NEOMA Business School (from Jan. 2005)

2010-2013 Member of the Promotion, Career & Valuation Committee at Rouen Business School.

2004 Lecturer at Rouen Business School (4 months) & Master lectures in Financial Instruments & Markets at University Paris I (2 months).

2001-2003 Research Fellow & lecturer in Economics at University Paris I.

1998-2001 Assistant lecturer in Economics at University Paris I.

Fellowships

2007 Invited fellow by prof. T. Hall at the University of Technology of Sydney (UTS), 1 month in the Quantitative Finance Research Centre (QFRC), School of Finance & Economics, Faculty of Business.

2004 Invited fellow by prof. T. Hall at the UTS, 3 months in the QFRC, School of Finance & Economics, Faculty of Business.

EDUCATION

2010 HDR in Economics–University of Cergy-Pontoise (Accreditation for Ph.D. & research supervision: *Systematic Risk, Idiosyncratic Risk, Liquidity Risk, & Stochastic Volatility: What is the Impact on Asset Valuation?*)

2002 Ph.D. in Economics–Université Paris I–Panthéon-Sorbonne (*Valuation & Analysis of Financial Assets' Default Risk*)

1998 MSc. in Money, Finance, & Banking–University of Paris I Panthéon-Sorbonne. Dissertation: *Term structure of interest rates: Evolution & modeling*. (1 year)

1996 MSc. in Statistics & Random Modeling in Economics & Finance–University Denis-Diderot (Paris 7-Jussieu).

1995 Master in Applied Mathematics & Statistics (e.g. mathematical and parametric statistics, linear modeling)–University Pierre & Marie Curie (Paris 6).

IT SKILLS: MS Office, Access, LaTeX; C/C++, Eviews, Gauss, Matlab, RATS, SAS, R/R Studio, Stata, Turbo Pascal.

PUBLICATIONS & RESEARCH

Articles

“Testing for non-chaoticity under noisy dynamics using the largest Lyapunov exponent.”, with de Peretti P., 2020, *Soft Computing (Springer Nature Group)*, 24(12), 8617–8626.

“Diversifying portfolios of U.S. stocks with crude oil & natural gas: A regime-dependent optimization with several risk measures.”, *Energy Economics*, 80(May 2019), 132-152.

“Flickering In Information Spreading Precedes Critical Transitions in Financial Markets.”, with de Peretti P., *Scientific Reports*, 9.

“Equity Market Information & Credit Risk Signaling: A Quantile Cointegrating Regression Approach.”, 2017, *Economic Modelling* 64, 48-59.

“Linking the gas and oil markets with the stock market: Investigating the U.S. relationship.”, 2016, *Energy Economics* 53, 5-16.

“Pricing the (European) option to switch between two energy sources: An application to crude oil & natural gas.”, 2015, *Energy Policy* 87, 270-283.

“Translating Financial Integration Into Correlation Risk: A Weekly Reporting’s Viewpoint for the Volatility Behavior of Stock Markets.”, 2013, *Economic Modelling* 30, 776-791.

“Are Demographic Attributes and Firm Characteristics Drivers of Gender Diversity? Investigating Women's Positions on French Boards of Directors.”, with M. Nekhili, 2012, *Journal of Business Ethics* 102(2), 205-212.

“A Correction for Classic Performance Measures.”, 2012, *Chinese Business Review* 11(1), 1–28.

“Deviation from Normality & Sharpe Ratio Behavior: A Brief Simulation Study.”, 2010, *Investment Management & Financial Innovations* 7(4), 106-118.

“Investigating the Common Latent Component in Stock Returns: Systematic & Systemic Risk Factors.”, 2010, *Bankers, Markets & Investors* 107(Jul-Aug), 20-44.

“Investigating The Dependence Structure Between Credit Default Swap Spreads & the U.S. Financial Market.”, 2010, *Annals of Finance* 6(4), 511-535.

“Is Corporate Bond Market Performance Connected with Stock Market Performance?”, 2009, *Bankers, Markets & Investors* 102(Sep-Oct), 45-58.

“Less Can Be More!”, with C. Walter, 2009, *Journal of Money, Investment & Banking* 9(May), 61-79.

“From Fault Tree to Credit Risk Assessment: A Case Study.”, 2008, *International Research Journal of Finance & Economics* 14(March), 379-401.

“From Fault Tree to Credit Risk Assessment: An Empirical Attempt.”, 2006, *ICFAI Journal of Risk & Insurance* (newly *IUP Journal of Risk & Insurance*) 3(1), 7-31.

“How Does Systematic Risk Impact US Credit Spreads? A Copula Study.”, 2005, *Bankers, Markets & Investors* (formerly *Revue Banque & Marchés*) 77(Jul–Aug), 5 - 16.

“Default and Liquidity Risks: Studying the Two Components of Credit Spread.”, 2004, *Revue des Sciences de Gestion* 210(Nov-Dec), 123 - 134. In French.

“Risk Disaggregation & Credit Risk Valuation in a Merton Framework”, 2003, *Journal of Risk Finance* 4(3), 27-42.

“Business Cycle & Default Risk”, with F. Radacal, Dec 2002, *Revue Finance*, Numéro Hors-Série: Mathématiques Financières 23, 45-75. In French.

“Systematic Risk, Idiosyncratic Risk: A Useful Distinction For Valuing European Options”, with Chauveau T., 2002, *Journal of Multinational Financial Management* 12(4-5), 305-321.

Book chapters

“Are Critical Slowing Down Indicators Useful to Detect Financial Crises?”, with de Peretti P. & Nagot I. In M. Billio, L. Pelizzon & R. Savona (Eds.), *Systemic Risk Tomography: Signals, Measurement & Transmission Channels*, Iste Press-Elsevier Science & Technology, Chap 3, 73-94, Dec. 2016.

“French SMEs’ Default: Inferring Critical Thresholds from Economic & Financial Fundamentals.” In G. Lecointre (Eds.), *Le grand livre de l’économie PME–2015*, 3rd edition, Gualino Lextenso Editions, 2014, Part 5, Chap 2, 725-752. In French.

“Linking U.S. CDS Indexes with the U.S. Stock Market: A Multidimensional Analysis with Market Price & Volatility Channels.” In J. Emblemvag (Eds.), *Risk Management/Book 2*, InTech-Open Access Publisher, 2012, Chap 18, 413-434.

“Model Risk: Caring about stylized features of asset returns!-How does equity market influence credit default swap market?” In Gregoriou Greg N., Hoppe C., Wehn C. (Eds.), Chap 5, *The Risk Modeling Evaluation Handbook: Rethinking Financial Risk Management Methodologies in the Global Capital Markets*, McGraw-Hill, USA, March 2010, 75-95.

“Investigating The Link Between Credit Default Swap Spreads & U.S. Financial Market.” In Greg N. Gregoriou and Paul U. Ali (Eds.), Chap 9, *The Credit Derivatives Handbook: Global Perspectives, Innovations and Market Drivers*, McGraw-Hill, USA, August 2008, 183-200.

“Idiosyncratic Risk, Systematic Risk & Stochastic Volatility: An Implementation of Merton's Credit Risk Valuation.” In Greg N. Gregoriou (Eds.), Chap 6, *Advances in Risk Management*, Palgrave-MacMillan, 2007, 107-131.

“How Does Systematic Risk Impact Stocks? A Study on the French Financial Market.” In Greg N. Gregoriou (Eds.), Chap 10, *Asset Allocation & International Investments*, Palgrave-MacMillan, 2007, 183-213.

Books

“Introduction to Stock Portfolio Management.”, CRC/Chapman Hall, (in progress, 2022).

“Une Histoire du Risque de Défaut.”, Editions Publibook Université, Collection Recherche, Nov. 2008.

“Rôle et Impact de la Volatilité dans le Pricing d'Options et de Produits Dérivés.”, Editions Publibook Université, Collection Recherche, Aug. 2004.

Entries in encyclopedia

“Capital Asset Pricing Model.”, *ENCYCLOPEDIA OF QUANTITATIVE FINANCE* edited by Rama Cont, 2010, John Wiley & Sons Ltd. Chichester, UK, p. 241-249.

ENCYCLOPEDIA OF ALTERNATIVE INVESTMENTS edited by G.N. Gregoriou, 2008 Chapman Hall UK:

- Vol. on MANAGED FUTURES: Liquidity (Liquid Market), p. 271;
- Vol. on HEDGE FUNDS: Bottom up investing, Performance persistence, Top down investing, p. 49-50, 355-356, 479.

Ongoing papers

“Price Dynamics and Synchronous Trading Driven by stickiness in Decision Making: A Laboratory Experiment.”, 2022, with de Peretti P. & Vitting-Andersen J., 2022, Final version. Accepted at the EURO 2022 Conference in Espoo.

“A Meta-Analysis of Supervised and Unsupervised Machine Learning Algorithms and their Application to Active Portfolio Management.”, Ayari S. and Gatfaoui H., 2022, Accepted at (11th International Conference of the Financial Engineering and Banking Society) FEBS 2022 Conference in Portsmouth and Euro Conference 2022 in Espoo.

“Portfolio Optimization across Financial Market States: An application of Clustering Algorithm” (Former title “Identifying financial state with clustering algorithm and optimizing portfolio”), Ayari S. and Gatfaoui H., 2022, Accepted at Euro Conference 2022 in Espoo, Preliminary draft.

“Capturing Long-Term Coupling & Short-Term Decoupling Crude Oil & Natural Gas Prices.”, 2021, Resubmitted.

“Is the U.S. Natural Gas Market Integrated or Segmented? A Dynamic Study of Regional Natural Gas Prices.”, 2019, ReSubmitted.

Working papers

“Clustering in Dynamic Causal Networks as a Measure of Systemic Risk on the Euro Zone”, with Billio M., Frattarolo L., de Peretti P., 2016, Documents de travail du Centre d'Economie de la Sorbonne-2016.46; SYRTO Working Paper Series, Working paper n. 3.

“Are critical slowing down indicators useful to detect financial crises?”, with Nagot I., de Peretti P., 2016, Documents de travail du Centre d'Economie de la Sorbonne-2016.45; SYRTO Working Paper Series, Working paper n. 2.

“Investigating the Linkages between U.S. CDS Spreads & Both the Equity Market Price & Equity Market Volatility Channels: A Quantile Cointegrating Regression Approach.”, 2015, SYRTO Working Paper Series, Working paper n. 27.

“The kiss of information theory that captures systemic risk”, with Addo P. M., de Peretti P., Runge J., March 2015, Documents de Travail du Centre d'Economie de la Sorbonne-2014.69R; SYRTO Working Paper Series, Working paper n. 20.

“How Does Systematic Risk Impact Stocks? A Study on the French Financial Market.”, Groupe ESC Rouen Working paper, n° 66, 2006.

“From Fault Tree to Credit Risk Assessment: A Case Study.”, Economics & Econometrics Research Institute, Research Paper n° EERI RP 2004/05, 2004.

“Idiosyncratic Risk, Systematic Risk and Stochastic Volatility: An Implementation of Merton's Credit Risk Valuation.”, Working Paper Series 123, School of Finance & Economics, University of Technology, Sydney, Apr 2004.

“Pricing and Hedging Options in Incomplete Markets: Idiosyncratic Risk, Systematic Risk & Stochastic Volatility.”, with Chauveau T., Working Paper Series 122, School of Finance & Economics, University of Technology, Sydney, Apr 2004.

“Risk Disaggregation & Credit Risk Valuation in the Merton Like Way.”, MSE Working paper, White series n° Bla02061, 2002.

“Risque de Défaut et Risque de Liquidité : Une Etude de Deux Composantes du Spread de Crédit.”, MSE Working paper, White series n° Bla02062, 2002.

“Risk Disaggregation As An Explanation Of The Smile: The Black & Scholes Formula Revisited”, with Chauveau T., MSE Working paper, White series n° Bla02006, 2002.

Academic activities

Course coordinator at IESEG School of Management: *Introductions to Derivatives* for 3rd year students from 2015, *Contemporary & Ethical Issues in Finance and Commodity Market* for students of Master in Asset & Risk Management from 2020.

Coordinator for 3rd year Finance courses and 2nd year French & English *Derivative Products* courses of Rouen Business School’s teaching program.

Journal Reviewer: Accounting & Finance Research, American Journal of Economics & Business Administration, Asian Business & Management, Canadian Social Science, Communications in Statistics - Simulation & Computation, Contemporary Economics, Economic Modelling, Emerging Markets Finance & Trade, Energy Economics, Energy Journal, Finance, International Journal of Economic Policy in Emerging Economies, International Journal of Finance & Economics, International Journal of Financial economics & Econometrics, International Journal of Financial Markets & Derivatives, International Journal of Financial Studies, International Journal of Theoretical & Applied Finance, International Review of Economics & Finance, Investment Management & Financial Innovations, Journal of Banking & Finance, Journal of Derivatives Research, Journal of Investment, Management International, Money & Banking, Journal of Risk, Journal of Systemics, Cybernetics & Informatics, International Review of Financial Analysis, Management International, Physica A, Plos One, Quantitative Finance, Review of Finance & Banking, Review of Quantitative Finance & Accounting, Soft Computing, Sustainability.

Review editor of *Frontiers in Artificial Intelligence* in Finance.

Reviewer of *Sustainability*.

Editorial Advisory Board member of the *Middle Eastern Finance & Economics Journal*, and Editorial Board Member of the *Journal of Business & Financial Affairs*.

Associate editor: *International Research Journal of Applied Finance*, *Review of Finance & Banking*.

Associate Guest Editor of the American Journal of Economics & Business Administration Vol. 2, No. 4, 2010 (special issue of AFE 2009 conference).

Reviewer for governmental research funding institutions in Canada (Social Sciences & Humanities Research Council–SSHRC 2009, Fonds Québécois de la Recherche sur la Nature & les Technologies–FQRNT 2010).

Scientific/program committee member: Advances in Financial Economics conference; Asian FMA 2010 conference; Annual conference of the Eastern Finance Association in 2009 & 2010; International Symposium on Management, Engineering & Informatics conferences (MEI-2009 to 2014); International Symposium on Risk Management & Cyber-Informatics conferences (RMCI-2009 to 2019); Dynamics of Socio-Economic Systems-Dyses 2018 conference on Systemic Risk.

Referee: “Habilitation à Diriger des Recherches” in Econometrics applied to Micro Economics & Finance of senior lecturer P. de Peretti, University Paris 1 Panthéon-Sorbonne, Sept. 2013.

Ph.D. referee: “*Credit Risk Determinants & Connections in the Euro Zone*” of Miss Amina BEN YAHYA, defended on 4 Nov. 2015 at the University of Paris Nord; “*On the Stock Market Dependence with China, Characteristic Information–Empirical Study & Data Analytics*” of Mr. Feng HE, defended on 14 Sep. 2015 at Tianjin University in China (in cooperation with University Paris 1); “*Corporate Bond Valuation & Credit Spreads: Lessons from the Financial Crisis*” of Mr. Achraf SEDDIK, defended on 27 Nov. 2015 at University Paris 13; “*Financial Crisis Forecasts & Application to Systemic Risk*” of Mr. Antoine KORNPROBST, defended on 23 Oct. 2017 at University Paris 1; “*Signal Extractions & Applications in Finance*” of Mr. Clément GOULET, defended on 5 Dec. 2017 at University Paris 1.

Member of Ph.D. pre-defense committee: “*Revisiting the Impact of Fiscal Policy on the Dynamics of Inflation: Three Essays on Turkish Economy*” of Mrs. Ayse ERTUGRUL, on 28 Sept. 2017; “*Signal Extractions & Applications in Finance*” of Mr. Clément GOULET, on 2 Oct. 2017.

Ph.D. co-supervision with P. de Peretti: “*Revisiting the Impact of Fiscal Policy on the Dynamics of Inflation: Three Essays on Turkish Economy*” of Mrs. Ayse ERTUGRUL, defended on 6 Dec. 2017 at University Paris 1.

Research member at CES (University Paris 1) on the systemic risk projects of the LABEX ReFi-Financial Regulation, and SYstemic Risk Tomography-SYRTO European research project (funded by the European Commission).

Last paper presentations: *Commodity & Energy Markets Annual Meeting 2018, 29th European Conference on Operational Research-EURO 2018, Quantitative Methods in Finance (QMF) Conference, 10th Research Workshop on Energy Markets 2019, Commodity & Energy Markets Association (CEMA) Annual Meeting 2019, 16th IAEE European Conference 2019, Energy Finance Christmas Workshop (EFC19) 2019.*

TEACHING

IÉSEG SCHOOL OF MANAGEMENT: *Banking II-Risk Management in the Banking Industry, Financial Econometrics, Financial Markets, Introduction to Derivatives (coordinator since 2015), Portfolio Management & Analysis, Active Portfolio Management, Finance Research Methodology, Contemporary & Ethical Issues in Finance (coordinator in 2019), Commodity Market (coordinator since 2018).*

NEOMA BUSINESS SCHOOL: *Financial Mathematics, Financial Markets, Market Finance, Fixed Income, Quantitative Methods, Options & Derivatives, Mathematics for Finance, Initiation to Econometrics, Applied Stock Portfolio Management, Stock Portfolio Management, Quantitative Financial Risk Management-Credit Risk (GARP FRM certificate).*

UNIVERSITY PARIS I–PANTHÉON-SORBONNE: *Financial Instruments & Markets, Statistics & Data Processing, Financial Choice Theory, Introduction to Economic Theory, Micro-economy.*