



**Hayette GATFAOUI**

**Ph.D. in Economics**

**Associate Professor, Finance**

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## **EDUCATION**

- 2010** Habilitation à Diriger des Recherches (HDR) / Accreditation for Research and Ph.D. Supervision, University of Cergy, France
- 2002** Ph.D. in Economics , University of Paris I Panthéon-Sorbonne, France
- 1998** MSc in Money, Finance, and Banking (1 year), University of Paris I Panthéon-Sorbonne, France
- 1996** MSc in Statistics and Random Modeling in Economics and Finance, University of Paris VII, France

## **RESEARCH INTERESTS**

Artificial Intelligence and Machine Learning, Behavioral finance, Big data and Machine learning, Chaotic systems, Corporate

## **PROFESSIONAL EXPERIENCE**

### **ACADEMIC:**

- 2022 - Present** Professor, Sapienza Università di Roma, Rome, Italy
- 2019 - Present** Master theses coach (Coaching/Advising new Adjunct supervisors and Students), IÉSEG School of Management, France
- 2017 - Present** Member of the Teaching and Learning Development Committee ( TLDC), IÉSEG School of Management, France
- 2010 - 2013** Member of the Promotion, Career and Valuation, Rouen Business School, Rouen, France
- 2005 - 2015** Associate Professor, Neoma Business School, Mont-Saint-Aignan, France
- 2004 - Present** Lecturer, Rouen Business School, Rouen, France
- 2001 - 2003** Assistant lecturer, University of Paris I Panthéon-Sorbonne, Paris, France
- 1998 - 2001** Assistant lecturer, University of Paris I Panthéon-Sorbonne, Paris, France

## **CONSULTING EXPERIENCE**

- 2005 - 2006** Consultant (7 months), Groupe SMA BTP, France
- 2000** Consultant, ABN Amro, France

## COURSES TAUGHT

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- Econometrics-time series, Grande ecole (master cycle)
- Contemporary & ethical issues in finance, Grande ecole (bachelor cycle)
- Commodity market, Grande ecole (bachelor cycle)
- Research & consulting tools, Grande ecole (bachelor cycle)
- Finance research methodology, Grande ecole (master cycle)
- Active portfolio management
- Active portfolio management, Grande ecole (master cycle)
- Financial econometrics, Post graduate program
- Financial markets, Grande ecole (bachelor cycle)
- Introduction to derivatives, Grande ecole (bachelor cycle)
- Portfolio management and analysis, Grande ecole (master cycle)
- Portfolio management and analysis, Msc in finance
- Banking ii: risk management in the banking industry

## INTELLECTUAL CONTRIBUTIONS

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### Papers in refereed journals

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#### Published

Gatfaoui H., De Peretti P., (2020), Testing for Non-Chaoticity Under Noisy Dynamics Using the Largest Lyapunov Exponent, *Soft Computing*, 24(12), pp. 8617–8626

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

Gatfaoui H., de Peretti P., (2019), Flickering In Information Spreading Precedes Critical Transitions in Financial Markets, *Scientific Reports*, 9, pp. 11

Gatfaoui H., (2017), Equity Market Information and Credit Risk Signaling: A Quantile Cointegrating Regression Approach, *Economic Modelling*, 64, pp. 48-59

Gatfaoui H., (2016), Linking the gas and oil markets with the stock market: Investigating the U.S. relationship, *Energy Economics*, 53, pp. 5-16

Gatfaoui H., (2015), Pricing the (European) option to switch between two energy sources: An application to crude oil and natural gas, *Energy Policy*, 87, pp. 270–283

Gatfaoui H., (2013), Translating Financial Integration Into Correlation Risk: A Weekly Reporting's Viewpoint for the Volatility Behavior of Stock Markets, *Economic Modelling*, 30, pp. 776-791

Nekhili M., Gatfaoui H., (2013), Are Demographic Attributes and Firm Characteristics Drivers of Gender Diversity? Investigating Women's Positions on French Boards of Directors, *Journal of Business Ethics*, 118(2), pp. 227-249

Gatfaoui H., (2012), A Correction for Classic Performance Measures, *Chinese Business Review*, 11(1), pp. 1-28

Gatfaoui H., (2010), Investigating the Common Latent Component in Stock Returns: Systematic and Systemic Risk Factors, *Bankers, Markets & Investors (Banque & Marchés)*, 107, pp. 20-44

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

Gatfaoui H., (2009), Is Corporate Bond Market Performance Connected with Stock Market Performance, *Bankers, Markets & Investors (Banque & Marchés)*, 102, pp. 45-58

Gatfaoui H., (2006), From Fault Tree to Credit Risk Assessment: An Empirical Attempt, *ICFAI Journal of Risk & Insurance*, 3(1), pp. 7-31

Gatfaoui H., (2005), How Does Systematic Risk Impact US Credit Spreads? A Copula Study, *Bankers, Markets & Investors (Banque & Marchés)*, 77, pp. 5-16

Gatfaoui H., (2004), Default and Liquidity Risks: Studying the Two Components of Credit Spread, *La Revue des Sciences de Gestion*, 210, pp. 123-134

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

Gatfaoui H., Radacal F., (2002), Business Cycle and Default Risk, *Finance*, 23, pp. 45-75

## **Papers in non-refereed journals**

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### **Published**

Gatfaoui H., (2010), Deviation from Normality and Sharpe Ratio Behavior: A Brief Simulation Study, *Investment Management and Financial Innovations*, 7(4), pp. 106-118

Gatfaoui H., Walter C., (2009), Less Can Be More, *Journal of Money, Investment and Banking*, (9), pp. 59-77

Gatfaoui H., (2008), From Fault Tree to Credit Risk Assessment: A Case Study, *International Research Journal of Finance and Economics*, (14), pp. 379-401

Gatfaoui H., (2003), Risk Disaggregation And Credit Risk Valuation in a Merton Framework , *Journal of Risk Finance*, 4(3), pp. 27-42

## **Communications in refereed conferences**

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### **International**

Gatfaoui H., (2023), *A Novel Approach of the Long- and Short-term relationship between Crude Oil and Natural Gas Prices* 67th EWGCFM Meeting 2023, Roma (Trieste district), Italy

Gatfaoui H., Ayari S., (2022), *A Meta-Analysis of supervised and unsupervised Machine Learning Algorithms and their Application to Active Portfolio Management (Mixed smart beta investing)* 11th International Conference of the Financial Engineering and Banking Society (FEBS), Espoo, United Kingdom

Gatfaoui H., Ayari S., (2022), *Portfolio Optimization across Financial Market States: An application of Clustering Algorithm* 32nd European Conference on Operational Research (EURO 2022), Espoo, Finland

Gatfaoui H., De Peretti P., Vitting-Andersen J., (2022), *Price dynamics and synchronous trading driven by stickiness in decision making: A laboratory experiment* 32nd European Conference on Operational Research (EURO 2022), Espoo, Finland

Gatfaoui H., (2020), *A Dynamic Study of the U.S. Natural Gas Market Integration* 33rd Australasian Finance and Banking Conference (AFBC), Sydney, Australia

Gatfaoui H., (2019), *A Dynamic Study of the U.S. Natural Gas Market Integration* Commodity and Energy Markets Association (CEMA) Annual Meeting 2019, Pittsburg, USA

Gatfaoui H., (2019), *A Dynamic Study of the U.S. Natural Gas Market Integration* Energy Finance Christmas Workshop (EFC19), Dublin, Ireland

Gatfaoui H., (2019), *Is the U.S. Natural Gas Market Integrated or Segmented? A Dynamic Study of Regional Natural Gas Prices* 10th Research Workshop on Energy Markets, Valencia, Spain

Gatfaoui H., (2018), *Capturing long-term coupling and short-term decoupling crude oil and natural gas prices* 29th European Conference on Operational Research (EURO 2018), Valencia, Spain

Gatfaoui H., (2018), *On the Long-Term Coupling and Short-Term Decoupling of Crude Oil and Natural Gas Prices* 9th Research Workshop on Energy Markets, Valencia, Spain

Gatfaoui H., (2018), *On the Long-Term Coupling and Short-Term Decoupling of Crude Oil and Natural Gas Prices* Commodity and Energy Markets Annual Meeting 2018, Roma, Italy

Gatfaoui H., de Peretti P., (2018), *Flickering of Information Spreading As an Early Warning of Critical Transitions in Financial Systems* Quantitative Methods in Finance (QMF) Conference, Sydney, Australia

Gatfaoui H., (2017), *Capturing Long-Term Coupling and Short-Term Decoupling Crude Oil and Natural Gas Prices* Isefi 2017-5th International Symposium on Environment Energy & Finance Issues, Paris, France

Gatfaoui H., (2017), *Investigating US Natural Gas Prices* Quantitative Methods in Finance (QMF) 2017, Sydney, Australia

Frattarolo L., Billio M., Gatfaoui H., De Peretti P., (2016), *Clustering in Dynamic Causal Networks as a Measure of Systemic Risk on the Euro Zone* Conference Quantitative Methods for Financial Regulation, Stony Brook, USA

Gatfaoui H., (2016), *Cross-Linkages between Commodity Markets over Time* Quantitative Methods in Finance (QMF) Conference, Sydney, Australia

Gatfaoui H., (2015), *Capturing Long-Term Coupling and Short-Term Decoupling Crude Oil and Natural Gas Prices* Quantitative Methods in Finance (QMF) Conference, Sydney, Australia

Gatfaoui H., (2015), *Pricing the (European) option to switch between two energy sources: An application to crude oil and natural gas* Computational and Financial Econometrics (CFE), London, United Kingdom

## **Other conference and seminar presentations**

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### **International**

Gatfaoui H., (2017), *Systemic Risk in Equity and CDS Markets* Workshop on Systemic Risk, Paris, France

Gatfaoui H., (2016), *L'Enseignant Innovateur* 2ème Symposium Management 2020 – Paroles d'Enseignants, Innovations et Pratiques en Enseignement Supérieur, Casablanca, Morocco

Gatfaoui H., De Peretti P., Frattarolo L., Billio M., (2016), *Clustering in Dynamic Causal Networks as a Measure of Systemic Risk on the Euro Zone* Syrto International Conference, Paris, France

## **Books**

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### **Published**

Gatfaoui H., (2008), *Une Histoire du Risque de Défaut*, 9782748344974, Éditions Publibook Université, Saint-Denis, 188 pages

Gatfaoui H., (2004), *Rôle et Impact de la Volatilité dans le Pricing d'Options et de Produits Dérivés*, 9782748303889, Éditions Publibook Université, Saint-Denis, 60 pages

## **Chapters in books**

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### **Published**

Gatfaoui H., Nagot I., De Peretti P., (2016), *Are Critical Slowing Down Indicators Useful to Detect Financial Crises?*, in: Billio, M., Pelizzon, L., Savona, R., (Eds.), *Systemic Risk Tomography – Signals, Measurement and Transmission Channels*, 9781785480850, Elsevier - ISTE Editions, London, chapter 3, pp. 73-94

Gatfaoui H., (2015), French SMEs' Default: Inferring Critical Thresholds from Economic and Financial Fundamentals (In French), in: Gilles Lecointre(Eds.), *Le grand livre de l'Economie PME 2015*, 978-2-297-02068-8, Paris : Gualino éditeur, Paris, chapter 2, pp. 725-752

Gatfaoui H., (2012), Linking U.S. CDS Indexes with the U.S. Stock Market: A Multidimensional Analysis with Market Price and Volatility Channels, in: Jan Emblemsvag(Eds.), *Risk Management for the Future - Theory and Cases*, 978-953-51-0571-8, InTech, Rijeka,, chapter 18, pp. 413-434

Gatfaoui H., (2010), Capital Asset Pricing Model, in: Rama Cont(Eds.), *ENCYCLOPEDIA OF QUANTITATIVE FINANCE*, 978-0-470-05756-8, John Wiley & Sons, Chichester, pp. 241-249

Gatfaoui H., (2010), Model Risk: Caring about stylized features of asset returns! - How does equity market influence credit default swap market?, in: Gregoriou Greg N., Hoppe Christian, Wehn Carsten(Eds.), *The Risk Modeling Evaluation Handbook: Rethinking Financial Risk Management Methodologies in the Global Capital Markets*, 9780071663700, McGraw-Hill Education, New York, chapter 5, pp. 75-95

Gatfaoui H., (2008), Investigating The Link Between Credit Default Swap Spreads and U.S. Financial Market, in: Greg N. Gregoriou and Paul U. Ali(Eds.), *The Credit Derivatives Handbook: Global Perspectives, Innovations and Market Drivers*, 978-0071549523, McGraw-Hill Education, New York, chapter 9, pp. 183-200

Gatfaoui H., (2007), How Does Systematic Risk Impact Stocks? A Study on the French Financial Market, in: Greg N. Gregoriou(Eds.), *Asset Allocation and International Investments*, 978-0-230-01917-1, Palgrave Macmillan, New York, NY, chapter 10, pp. 183-213

Gatfaoui H., (2007), Idiosyncratic Risk, Systematic Risk and Stochastic Volatility: an Implementation of Merton's Credit Risk Valuation, in: Greg N. Gregoriou(Eds.), *Advances in Risk Management*, 978-0-230-01916-4, Palgrave Macmillan, New York, NY, chapter 6, pp. 107-131

## **PROFESSIONAL MEMBERSHIPS**

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- 2019** International Association for Energy Economics (IAEE), USA
- 2019** Association for Energy Economics-France (F-AEE), France
- 2019** Commodity & Energy Markets Association (CEMA) , Germany
- 2017** The Institute for Operations Research and the Management Sciences (INFORMS), USA
- 2016** ICoR research center at IESEG School of Management, France
- 2016** Athens Institute for Education and Research, Greece
- 2015** LEM CNRS (UMR 9221), France
- 2013** Labex RéFi, France
- 2013** University of Paris I Panthéon-Sorbonne, France
- Global Association of Risk Professionals (GARP)
- Professional Risk Managers' International Association (PRMIA)
- Emerald Insight
- Computational and Methodological Statistics (CMStatistics, DMC, SEA, SSEF)
- Association for Public Economic Theory (APET)

## **EDITORIAL ACTIVITY**

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### **Associate Editor in an academic journal**

- 2010** International Research Journal of Applied Finance

**Editor in a special issue of a peer reviewed journal**

**2010** American Journal of Economics and Business Administration

**Editor in an academic journal**

**2021** Sustainability

**2020** Artificial Intelligence in Finance

**Member of the editorial board of an academic journal**

**2018** UPI Journal of Business Management and Computer Applications, India

Review of Finance and Banking

**Reviewer in an academic journal**

**2023** Annals of Operations Research

**2022 - 2023** Annals of Operations Research

**2022** Review of Managerial Science

**2022** PHYSICA A

**2022** Review of Managerial Science

**2022** PHYSICA A

**2021** FRONTIERS IN ARTIFICIAL INTELLIGENCE

**2021** FRONTIERS IN ARTIFICIAL INTELLIGENCE

**2020** Energy Journal

**2020** Energy Economics

**2020** Plos One

**2020** Energy Economics

**2020** Physica A

**2020** Energy Journal

**2019 - 2020** Soft Computing

**2019** Physica A

**2019** Energy Economics

**2019 - 2020** Journal of South East Asian Economics (JSAE)

**2019** Energy Economics

**2019** Soft Computing

**2019** Soft Computing

2019 Soft Computing Journal

2019 Soft Computing Journal

2019 Soft Computing

2019 International Journal of Finance and Economics

2018 Revue Management international, Canada

2018 Investment Management and Financial Innovations

2018 Energy Economics

2018 Energy Economics

2018 Energy Economics

2018 Energy Economics

2017 Management International, Canada

2017 Energy Policy

2017 Energy Economics

2017 Economic Modelling

2017 Athens Journal of Business and Economics

2016 International Review of Financial Analysis

2016 Energy Economics

2016 Management International, Canada

2015 Quantitative Finance

Journal of Mathematical Finance

Sustainability

Sustainability

Sustainability

Physica A: Statistical Mechanics and its Applications

Physica A: Statistical Mechanics and its Applications

Frontiers in Artificial Intelligence in Finance

Frontiers in Artificial Intelligence in Finance

Energy Economics

Energy Economics

**Reviewer in an book / textbook**

2016 Rejda / McNamara's Principles of Risk Management and Insurance, 13/e, United Kingdom

## PROFESSIONAL SERVICE

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### Committee/task force member

Research seminar, France

### Discussant in an academic conference

2023 67th EWGCFM MEETING, Italy

2020 33rd Australasian Finance and Banking Conference - AFBC 2020, Australia

2019 Commodity and Energy Markets Association Annual Meeting 2019 (CEM2019), USA

Commodity and Energy Markets Association Annual Meeting 2018 (CEM2018), Italy

ENERGY AND COMMODITY FINANCE Conference 2016 (ECOMFIN 2016), ESSEC Business School , France

### Keynote address

2022 Workshop "Interdisciplinary and multiple approaches to systemic risks", Poland

### Member of the organizing committee of an academic conference

1st IÉSEG Financial Risk Management Conference, France

### Member of the scientific committee of an academic conference

2018 Dyses2018, France

### Reviewer for an academic conference

2023 IMCIC 2023

2017 - 2018 Risk Management and Cyber-Informatics: RMCI 2018, USA

Risk Management and Cyber-Informatics: RMCI 2016

Risk Management and Cyber-Informatics: RMCI 2020 Conference

Wmsci Conference

### Session chair in an academic conference

2023 67th EWGCFM MEETING, Italy

2018 Quantitative Methods in Finance - QMF2018, Australia

2017 Quantitative Methods for Finance (QMF) 2017 Conference, Australia

2016 Quantitative Methods for Finance (QMF) 2016 Conference, Australia

QMF 2015, Australia

ENERGY AND COMMODITY FINANCE Conference 2016 (ECOMFIN 2016), ESSEC Business School , France

Commodity and Energy Markets Association Annual Meeting 2018 (CEM2018), Italy



## RESEARCH ACTIVITIES

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### COMMITTEE CHAIR

<b>yyyy2022</b>	Portfolio Management, IÉSEG School of Management, France
<b>2020 - 2021</b>	Contemporary & Ethical Issues in Finance, IÉSEG School of Management, France
<b>yyyy2020</b>	Commodity Market, IÉSEG School of Management, France
<b>yyyy2015</b>	Fundamentals of Financial Derivatives (Formerly redesigned Introduction to derivatives), IÉSEG School of Management, France
<b>yyyy2023</b>	FINANCE DEPARTMENT, IÉSEG School of Management, France
<b>yyyy2021</b>	Finance Department, IÉSEG School of Management, France
<b>yyyy2021</b>	Finance Department, IÉSEG School of Management, France
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<b>yyyy2021</b>	Finance Department, IÉSEG School of Management, France
<b>yyyy2021</b>	Finance Department, IÉSEG School of Management, France
<b>yyyy2018</b>	Finance, Audit and Control, IÉSEG School of Management, France
<b>yyyy2017</b>	TLDC (Teaching and Learning Development Committee), IÉSEG School of Management, France
<b>yyyy2022</b>	Finance department, IÉSEG School of Management, France
<b>yyyy2021</b>	Finance, IÉSEG School of Management, France
<b>yyyy2017</b>	Finance,Audit and Control, IÉSEG School of Management, France
<b>yyyy2023</b>	FINANCE, IÉSEG School of Management, France
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yyyy2023 FINANCE, IÉSEG School of Management, France

yyyy2021 Finance Department, IÉSEG School of Management, France

yyyy2021 Finance Department, IÉSEG School of Management, France

yyyy2021 Finance Department, IÉSEG School of Management, France

#### Supervision of Ph.D. Thesis:

2023 Director, Artificial Intelligence and Portfolio Management, LEM UMR CNRS

2023 Director, How do CSR initiatives of automotive companies influence their financial performance ?

2023 Director, Portfolio optimization and risk measures for thematic investments, IÉSEG School of Management

2023 Director, Analysis of the financial performance of SRI, so-called green funds: ecological reality or financial greenwashing?, IÉSEG School of Management

2023 Director, What is the impact of entries and exits of institutional investors on stock price?, IÉSEG School of Management

2023 Director, How do music royalties perform as an alternative investment and what factors impact their valuation, revenue forecasting, and investment preferences?, IÉSEG School of Management

2023 Director, To what extent do Environmental, Social and Governance (ESG) score impact Corporate financial performance, and how does this relationship vary across Europe and the US ?, IÉSEG School of Management

2023 Director, What are the differences in terms of functioning between SRI investments in France and in the US and are their performances comparable since 2019?, IÉSEG School of Management

2023 Director, What is the influence of women's representation in management committees on corporate economic and environmental performance indicators,, IÉSEG School of Management

2022 Director, Relationship between ecological involvement and financial performance: evidence from CAC40 companies, IÉSEG School of Management

2022 Director, Is the All-Weather portfolio able to perform over all the phases of the economic cycle?, IÉSEG School of Management

2022 Director, Are thematic ETF performing better than well diversified ETF ?, IÉSEG School of Management

2022 Director, Are thematic ETF performing better than well diversified ETF ?, IÉSEG School of Management

2022 Director, Quelle influence la digitalisation a sur le métier de banquier privé et ses clients ?, IÉSEG School of Management

2022 Director, How Diversity on Gender, Age and Nationality in the American Boardroom Influence on the Firm's Performance?, IÉSEG School of Management

2022 Director, How well do Socially Responsible Investment perform in comparison with conventional funds between 2012 and 2022? The case of the US market., IÉSEG School of Management

2022 Director, Can gold still be considered as a safe haven investment during financial crisis ?, IÉSEG School of Management

2020 Director, Using Artificial Intelligence for Asset Selection and Management

- 2017** Co-director, Revisiting the impact of fiscal policy on the dynamics of inflation: Three essays on Turkish economy, University of Paris I Panthéon-Sorbonne
- 2014 - 2017** Co-director, Analysing the impact of fiscal policy on price levels: Empirical evidence from Turkey, University of Paris I Panthéon-Sorbonne