Bilel Sanhaji

Associate Professor
Maître de Conférences HDR

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Academic Positions

2015 – **Associate Professor (MCF) of Economics**, *Université Paris 8*

2015 – **Member of Laboratoire d'Économie Dionysien (LED)**, *Université Paris 8*, EA 3391

2014 – 2015 **Associate Researcher**, *Aix-Marseille School of Economics (AMSE)*

2014 – 2015 **Teaching Assistant**, *Aix-Marseille School of Economics (AMSE)*

2011 – 2014 **PhD Fellow & Teaching Assistant**, *AMSE & Aix-Marseille University*

Education

2023 **Habilitation à Diriger des Recherches (HDR) in Economics**, *Université Paris 8*
Title: Tests in conditional covariances and correlations
Jury: Julien Chevallier, Alain Hecq, Valérie Mignon, Jeroen Rombouts and Jean-Michel Zakoïan

2015 **Qualification Maître de Conférences (MCF)**, *Section 05: Economics*
Jury: Nour Meddahi

2014 **PhD in Economics**, *Aix-Marseille School of Economics*
Title: Multivariate heteroskedastic modelling and financial transmission
Supervisor: Anne Péguin-Feissolle (Research Director CNRS, GREQAM (AMSE))
Jury: Luc Bauwens, René Garcia, Christophe Hurlin and Sébastien Laurent.

2011 **Master in Economic Analysis and Econometrics**, *EHESS – GREQAM (AMSE) – École Centrale de Marseille*

2011 **University Diploma in Methods for Research in Economics**, *Aix-Marseille University*

2006 **Master in Financial Macroeconomics and Development**, *University of Toulon*

2004 **Bachelor in Economics**, *University of Toulon*

Editorial Positions

2019 – **Finance Research Letters**, *Associate Editor*

Non Academic Positions

2007 – 2009 **Forex Analyst**, *Société Générale Corporate & Investment Banking, La Défense, France*

Research interests

Nonlinear time series econometrics; Volatility modeling; Test statistics; Multivariate conditional heteroskedastic models; Score-Driven models

Grants

2022 – 2023 AAP P8 "Recherche", *Université Paris 8 (co-sponsor)*

2021 – 2022 AAP COMUE, *Université Paris Lumière (co-sponsor)*

2021 – 2022 AAP P8 "Manifestation Scientifique", *Université Paris 8 (co-sponsor)*

2015 Visiting Researcher, *The University of Tokyo, Graduate School of Mathematical Science, Japan*

2013 Visiting PhD Grant AMSE, *Aix-Marseille School of Economics*

2011 – 2014 Doctoral grant with complementary teaching mission, *ED 372, French Ministry of Research*

Publications

Refereed Journal Articles

2025 Sanhaji B., "A Test for Time-Varying Smooth Transition Conditional Covariance Models in Multivariate Time Series", Studies in Nonlinear Dynamics & Econometrics (SNDE), vol. 29, no. 4, 2025, pp. 425-436.

2024 Diop P.O., Chevallier J. and B. Sanhaji, "Collapse of Silicon Valley Bank and USDC Depegging: A Machine Learning Experiment", FinTech, 3, 569-590

2023 Chevallier J and B. Sanhaji, "Jump-robust REGARCH-MIDAS-X estimators for Bitcoin and Ethereum volatility indices", Stats, 6(4), 1339-1370

2023 Sanhaji B. and J. Chevallier, "Tracking 'pure' systematic risk with realized betas for Bitcoin and Ethereum", Econometrics, 11 (3), 19

2017 Sanhaji B., "Testing for nonlinearity in conditional covariances", Journal of Time Series Econometrics, vol. 9, iss. 2, 20160010

2016 Péguin-Feissolle A. and B. Sanhaji, "Tests of the constancy of conditional correlations of unknown functional form in multivariate GARCH models", Annals of Economics and Statistics, 123/124, 77–101

2015 Hua J. and B. Sanhaji, "Volatility spillovers across daytime and overnight information between China and world equity markets", Applied Economics, vol. 47, iss. 50, 5407–5431

Handbook Edition

2019 ***Advances in Applied Financial Econometrics***, *Co-Editor*

International Financial Markets, *Chevallier, J., Goutte, S., Guerreiro, D., Saglio, S., and B. Sanhaji (2019)*

Volume 1. Routledge, Taylor & Francis

Financial Mathematics, Volatility and Covariance Modelling, *Chevallier, J., Goutte, S., Guerreiro, D., Saglio, S., and B. Sanhaji (2019)*

Volume 2. Routledge, Taylor & Francis. Editor of the track: "**Financial Volatility and Covariance Modelling**"

Unpublished Articles

Work in Progress

Sanhaji B., "A Joint Portmanteau Test for Multivariate Conditional Mean and Variance Models"

Sanhaji B., "Scalar BEKK with covariance targeting and smooth transition" previously "Nonlinear scalar BEKK"

Chuffart T. and B. Sanhaji, "A misspecification test for nonlinearity in conditional covariances"

Unpublished Work

Laurent S. and B. Sanhaji, "Flexible Dynamic Conditional Score Model"

Sanhaji B., "Volatility transmission between US and Latin America"

Working Papers

2015 Péguin-Feissolle A. and B. Sanhaji, "Testing the constancy of conditional correlations in multivariate GARCH-type models"; Working Paper AMSE, WP 2015 Nr 16. Working paper version of "Tests of the constancy of conditional correlations of unknown functional form in multivariate GARCH models"

Other Contribution

2012 Ben Yahmed, S., Sanhaji, B., and Tison, A., "Une ou des opinions publiques à l'Ouest", Junior contribution to the 11ème rencontres économiques du cercle des économistes, Aix-en-Provence (France)

Supplementary Materials

2017 Sanhaji B., Online appendix for "Testing for nonlinearity in conditional covariances"

2017 Sanhaji B., `Matlab toolbox` for "Testing for nonlinearity in conditional covariances"

2016 Sanhaji B., `R` package for "Tests of the constancy of conditional correlations of unknown functional form in multivariate GARCH models"

Talks

International Conferences

2025 **32nd Society for Nonlinear Dynamics and Econometrics**, *SNDE'25*, San Antonio (USA)

2023 **25th Computational Statistics**, *COMPSTAT'23*, London (UK), (invited session)

2022 **16th Computational and Financial Econometrics**, *CFE'22*, London (UK)

2022 **5th Econometrics and Statistics**, *EcoSta'22*, Kyoto (Japan)

2022 **29th Society for Nonlinear Dynamics and Econometrics**, *SNDE'22*, Orlando (USA), (virtual)

2018 **26th Society for Nonlinear Dynamics and Econometrics**, *SNDE'18*, Tokyo (Japan)

2017 **11th Computational and Financial Econometrics**, *CFE'17*, London (UK), (invited session)

2017 **1st Econometrics and Statistics**, *EcoSta'17*, Hong Kong

2015 **9th Computational and Financial Econometrics**, *CFE'15*, London (UK), (invited session)

2015 **French Doctoral Conference**, *ADRES'15*, Paris (France)

2014 **63rd Annual Meeting of the French Economic Association**, *AFSE'14*, Lyon (France)

2014 **10th CIREQ Ph.D. Students' Conference**, *Montreal (Canada)*

2014 **21st Forecasting Financial Markets**, *Marseille (France)*

2014 **31st International French Finance Association Conference**, *AFFI'14*, Aix-en-Provence (France)

2014 **13th International Workshop of Spatial Econometrics and Statistics**, *Toulon (France)*

2014 **3rd International Symposium in Computational Economics and Finance**, *ISCEF'14*, Paris (France)

2013 **7th Computational and Financial Econometrics**, *CFE'13*, London (UK), (invited session)

2013 **21th Society for Nonlinear Dynamics and Econometrics**, *SNDE'13*, Milan (Italy)

2012 **6th Computational and Financial Econometrics**, *CFE'12*, Oviedo (Spain)

2012 **5th PhD Conference in Economics**, *Athens (Greece)*

2011 **10ème Journée d'économétrie**, *Nanterre (France)*, (Poster session)

Invited Workshops

2021 **Big Data, Média et Politique Monétaire**, *Saint-Denis (France)*

2021 **1st Conference of the team Macroeconomics, Finance**, *Saint-Denis (France)*, Econometrics and empirical finance, international economics, cliometrics and complexity

2016 **The New Financial Reality Seminar #5: Risk Measures**, *Orléans (France)*

2015 **Nouveaux développements dans la modélisation et la prévision des risques extrêmes en finance**, *Marseille (France)*, (Speed session)

2014 **AMSE-GREQAM Workshop in Financial Econometrics**, *Aix-en-Provence (France)*

2012 **Nonlinear and Asymmetric Models in Applied Economics**, *Paris (France)*

Invited Seminars

2019 **Seminar of Economics**, *University of Pretoria*, Pretoria (South Africa)

2017 **Seminar of Econometrics**, *University of Maastricht*, Maastricht (The Netherlands)

2016 **Seminar of Economics**, *University Paris 8, LED*, Saint-Denis (Paris)

2014 **Job Market Seminar**, *University of Orléans, LEO*, Orléans (France)

2014 **Financial Econometrics Seminar**, *Aix-Marseille School of Economics*, Aix-en-Provence (France)

2014 **AMSE-GREQAM PhD Seminar**, *Aix-Marseille School of Economics*, Marseille (France)

2013 **CREATES Lunch Seminar**, *Aarhus BSS*, Aarhus (Denmark)

2012 **AMSE-GREQAM PhD Seminar**, *Aix-Marseille School of Economics*, Marseille (France)

2011 **AMSE-GREQAM PhD Seminar**, *Aix-Marseille School of Economics*, Marseille (France)

Short Visits

2015 **The University of Tokyo, Graduate School of Mathematical Sciences**, *Tokyo (Japan)*, Host: Nakahiro Yoshida, (3 weeks)

2013 **Aarhus University, CREATES**, *Aarhus (Denmark)*, Host: Timo Teräsvirta, (4 months)

Organization

2022 **2nd Conference Macroeconomics, Finance**, *Université Paris 8 Project*

2021 **Big Data, Média et Politique Monétaire**, *Université Paris Lumière Project*

2021 **1st Conference Macroeconomics, Finance**, *Université Paris 8 Project*

2012 **11ème Journées Louis-André Gérard-Varet**, *Aix-Marseille University*, (staff)

PhD Supervision

2022 – 2025 **Papa Ousseynou Diop**, *Université Paris 8*, (joint w/ J. Chevallier)

Scientific Activities

Manuscript Refereeing

Econometrics and Statistics, Economics Bulletin, Economics Research International, Finance Research Letters, International Journal of Forecasting, International Review of Financial Analysis, Journal of Time Series Analysis, Pacific Economic Review, Revue d'Économie Politique, Revue Économique, Studies in Nonlinear Dynamics & Econometrics

Discussion in Conferences

Journées d'Économétrie de Nanterre (2023, 2022, 2018, 2017, 2016), 2nd Conference Macroeconomics, Finance (2022), Doctoriales (2017), AFFI (2014), ISCEF (2014), AMSE PhD Seminar (×2, 2014)

Participation to PhD Committees

2023 A. Ayadi, Université Paris 8 and IHEC Carthage

Thesis Monitoring Committees (Université Paris 8)

2024 B. Allamba; Y. Huang; I. Kanoute; P. Livet; C. Varlet-Bertrand

2023 B. Allamba; Y. Huang; A. Rebours; C. Varlet-Bertrand

2022 A. Ayadi; L. Gauthier; F. Moyer; A. Rebours; C. Varlet-Bertrand

Supervision of Bachelor and Master Research Theses

2025 C. Niabaly (M1), D. Sarangabanyi (M1), Balhallah (M1), I. Marie (M1), E. Bayoussef (Bsc), A. Buccafurri (Bsc)

2024 A. Ait-Taleb (M2), A. Bernard (M2), Y. Medjnoun (Bsc)

2023 A. Kihal (M2), M. Li (Bsc)

2022 M. Fofana (M2), H. Medjebar (M2), H. Id Ouhoukar (M2)

2021 A.A. Mohamed (M2), T.P. Nguyen (Bsc)

2020 M. Fofana (Bsc), A. Ghabouche (Bsc)

2018 T. Sertcelik (M1), M. Mabonzo (Bsc), M. Toure (Bsc)

Expert's Report

2021 Qualification MCF position, Université Paris 8

2017 Call for projects, Université Paris Lumière

Member of Selection Committees for Associate Professor (MCF) positions

2025 **Université d'Orléans (IUT, LEO)**, *Economics*

2022 **Université Paris Nanterre (EconomiX)**, *Theoretical and Applied Econometrics*

2021 **Université d'Orléans (LEO)**, *Theoretical Econometrics, Financial Econometrics*

2021 **Université Paris 8 (LED)**, *(Vice President), Economics*

2021 **Université Paris 8 (LED)**, *Macroeconomics and Finance*

Collective Responsibilities – Université Paris 8

N.B.: Bachelor Economics and Management has about 600 students; UFR AES - Economics and Management has about 1200 students.

President

2020 – **Commission pédagogique**, *UFR AES - Economics and Management*

2020 – 2025 **Jury**, *Bachelor Economics and Management*

Member

2023 – **Laboratory council, LED**

2017 – 2023 **Laboratory council, LED**, *Elected for the Research Field: Macroeconomics, Finance*

2016 – **Commission pédagogique**, *UFR AES - Economics and Management*

2017 – 2025 **Jury**, *Bachelor Economics and Management*

2017 – **Commission Parcoursup**, *Bachelor Economics and Management*

2017 – **Commission Candidature Paris 8**, *Bachelor 2 and 3 Economics and Management, Track: Economics and Finance*

2017 – **Commission Étude en France**, *Bachelor 2 and 3 Economics and Management, Track: Economics and Finance*

2016 – 2019 **Commission Étude en France**, *Bachelor 1 Economics and Management*

Coordinator

2017 – **Research Theses**, *Bachelor 3 Economics and Management*

2016 – 2025 **Microeconomics 1**, *Bachelor 1 Economics and Management*

2020 – 2024 **Descriptive Statistics 2**, *Bachelor 1 Economics and Management*

2018 – 2020 **Financial Mathematics**, *Bachelor 2 Economics and Management*

Teaching Experience

Associate Professor, Université Paris 8

2024 – **Time Series Econometrics**, *Master 1 MBFA*, Lecture (33h) & Tutorial (15h)
2023 – **Workshop in Data Analysis**, *Bachelor 3*, Research Supervision, Meetings & Follow-ups
2020 – **Probability and Statistics**, *Bachelor 3*, Lecture (30h) & Tutorial (15h)
2016 – **Financial Econometrics**, *Master 2 MBFA*, Lecture (24h) & Tutorial (12h)
2015 – **Microeconomics 1**, *Bachelor 1*, Lecture/Tutorial (36h)
2015 – **Dissertation supervision**, *Bachelor 3 and Master 1 & 2 MBFA*
2020 – 2024 **Descriptive Statistics 2**, *Bachelor 1*, Lecture/Tutorial (18h)
2017 – 2020 **Financial Mathematics**, *Bachelor 2*, Lecture/Tutorial (36h)
2015 – 2020 **Analysis and Descriptive Statistics 1**, *Bachelor 1*, Lecture/Tutorial (72h)
2015 – 2017 **Financial Economics**, *Bachelor 2*, Lecture (30h)

Teaching Assistant, Aix-Marseille Université

2014 – 2015 **Econometrics**, *Master 1 AMSE*, Tutorial
2013 – 2015 **Statistics**, *Bachelor 1*, Tutorial
2012 – 2013 **Monetary Macroeconomics**, *Bachelor 2*, Tutorial
2011 – 2012 **Microeconomics**, *Bachelor 1*, Tutorial
2011 – 2012 **Principles of Economics**, *Bachelor 1*, Tutorial

External Lecturer

2025 – 2026 **Financial Econometrics**, *Master 2 MASERATI – Data Science*, UPEC, Lecture (18h)
2021 – 2022 **Introduction to Econometrics**, *MSc.*, ESSEC Business School, Lecture (30h)
2019 – 2020 **Time Series Analysis**, *MSc. and PhD*, CY Paris Université and ESSEC, Lecture (30h)
2019 **Multivariate Volatility Modelling**, *MSc.*, Pretoria University, Lecture (3h)
2018 – 2019 **Financial Econometrics**, *MSc.*, EDHEC Business School, Tutorial (6h)
2018 – 2019 **Statistics and Econometrics**, *MSc.*, EDHEC, Lecture (13h) & Tutorial (8h)
2012 – 2014 **Artificial Neural Networks**, *Master 2 MBFA*, Aix-Marseille Université, Lecture (3h)

Software & Languages

Software

`R, Matlab, Ox, Python, C++, Markdown, LaTeX`

Languages

French (native), English (advanced), Spanish (basic), Arabic (newbie)