



QUANTITATIVE MANAGEMENT INITIATIVE

Academic partner(s) : Université Paris Dauphine – PSL and CREST - ENSAE

Financial partner(s) : LFIS Capital

Scientific director(s) : Gaëlle Le Fol

Website : <https://www.qminitiative.org>

RESEARCH PROGRAM DESCRIPTION

In the post-2007 financial-crisis context, Quantitative Management professionals from the French Financial sector came together in 2010 to create QuantValley to promote Quantitative Finance and its benefits in terms of research, risk management and value creation for investors. The association was joined by GFI and UBS, and thanks to their support, the Quantitative Management Initiative (QMI) was born in early 2012. Today, the Quantitative Management Initiative (QMI), who is supported by LFIS Capital, is investing even more in the promotion of research and the development of interactions between the academic world and the Professional world of Quantitative management and is structured around the following themes:

- Developing quantitative research applied to asset management;
- Facilitating knowledge transfer between academic environments and asset management agents;
- Responding to the research issues of various private partners;
- Encouraging collaboration with one or more companies that are leaders in fields relating to quantitative management;
- Promoting the image of asset management based on quantitative approaches;
- Increasing and consolidating the high level of excellence by organising reflexion, research and training activities on an international scale relating to one or more themes of general interest;
- Reflecting on the evolution of regulation pertaining to asset management.

All the research topics covered by the QMI are structured around the 3 main stages of the creation of a quantitative investment strategy. The first step is related to **signal generation**. Particular attention is paid to the use of artificial intelligence in this production of signals. The second step involves **portfolio construction and dynamic risk management**. In particular, we are interested in issues related to risk disaggregation and portfolio allocation, contagion, and potential crowding due to joint use of related strategies by different funds will also be addressed. Finally, the last step covers all the **challenges of real-world implementation of paper portfolios** from the previous step. This research area covers problems of capacity and liquidity, market impact and some high frequency trading related problems.

RESEARCH TEAM

Researchers

- Serge DAROLLES, Université Paris Dauphine – PSL, and CREST
- Juan IMBET, Université Paris Dauphine – PSL, and CREST
- Gaëlle LE FOL, Université Paris Dauphine – PSL, and CREST

- Jean-Michel ZAKOIAN, CREST-ENSAE
- Marius ZOICAN, Toronto University

- C. GOURIEROUX, Toulouse School of Economics et Toronto University
- E. JOUINI, Université Paris Dauphine – PSL
- M. LAMBERT, HEC Liège
- G. MERO, Université de Cergy Pontoise
- T. NEFEDOVA, ESCP Business School
- F. RIVA, Université Paris Dauphine – PSL

Postdoctoral Researchers

- E. BENHAMOU, ancien PhD Université Paris Dauphine – PSL
- H. CHAN, ancien PhD Université Paris Dauphine – PSL
- J. ROYER, ancien PhD CREST ENSAE
- B. SAGNA, ancienne PhD Université Paris Dauphine – PSL
- A. STALLA-BOURDILLON, ancien PhD Université Paris Dauphine – PSL

PhD Students

- J. COADOU, PhD Université Paris Dauphine – PSL
- O. COUPERIER, PhD CREST-ENSAE
- L. DUMONTIER, PhD Université Paris Dauphine – PSL
- A. FARJERON, PhD HEC Liège et Université Paris Dauphine – PSL

PUBLICATIONS OF THE YEAR DIRECTLY RELATED TO THE RESEARCH PROGRAM

Published in 2023 ([Publication since 2012](#))

Ain Tommar S., S. Darolles and E. Jurczenko, Private equity fund performance around the world. Forthcoming in Financial Analysts Journal.

Belly, G., Boeckelmann, L., Caicedo Graciano, C. M., Di Iorio, A., Istrefi, K., Siakoulis, V., and A. Stalla-Bourdillon (2023), "Forecasting Sovereign Risk in the Euro Area via Machine Learning". Journal of Forecasting, 42 (3), p. 657-684.

Brolley M. and M. Zoican (2023), Liquid Speed: A Micro-Burst Fee for Low-Latency Exchanges, Journal of Financial Markets, vol. 64, Issue C. Available online since 2022.

Brolley M. and M. Zoican (2023), On-demand Fast Trading on Decentralized Exchanges, Finance Research Letters, vol. 51, 103350.

Chan H. and T. Tan (2023), Crowding and Liquidity Shocks, Journal of Portfolio Management, vol. 49(3), 36-61.

Chapkovski P., M. Khapko, and M. Zoican (2023), Trading Gamification and Investor Behaviour, Forthcoming in Management Science.

Chatelais, N., Stalla-Bourdillon, A., and M. Chinn (2023), Forecasting Real Activity using Cross-Sectoral Stock Market Information. Journal of International Money and Finance, vol 131, 102800.

Chevalier C. and S. Darolles (2023), "Diversifying trends", Econometrics and Statistics, in Press.

Djogbenou, A., C. Gouriéroux, J. Jasiak and M. Bandehali, Composite Likelihood for Stochastic Migration Model with Unobserved Factor, forthcoming in Journal of Financial Econometrics.

Francq, C., Kandji, B.M. and J.M. Zakoïan (2023): Inference on multiple component GARCH without any small-order moment, Econometric Theory, forthcoming <https://doi.org/10.1017/S0266466623000142>

Francq, C., and J.M. Zakoïan (2023): Optimal estimating function for weak location-scale dynamic models, Journal of Time Series Analysis 44, 533-555.

Francq, C., and J.M. Zakoïan (2023), Testing hypotheses on the innovations in semi-parametric conditional volatility models", Journal of Financial Econometrics, vol. 21, Issue 5, p. 1443-1482. available online since 2022.

Gourieroux, C., and J., Jasiak, Generalized Covariance Estimators, Journal of Business and Economic Statistics, 41, 1315-1327.

Gourieroux, C., and J., Jasiak, Dynamic Deconvolution of Independent AR(1) Sources, Journal of Time Series Analysis, 44, 151-180.

Gourieroux, C., and J., Jasiak, (2023), Time Varying Markov Process with Partially Observed Aggregate Data: An Application To Coronavirus, Journal of Econometrics, vol. 232, issue 1, p. 35-51.

Gourieroux, C., and J., Jasiak, Temporally Local Maximum Likelihood with Application to SIS Model", forthcoming in Journal of Time Series Analysis.

Gourieroux, C., and Y., Lu, Noncausal Affine Processes with Applications to Derivating Pricing", Mathematical Finance, 33, 766-796.

Lambert M., M. Zoican and 342 co-authors (2023), Non-standard errors, Forthcoming in Journal of Finance.

Martineau C., and M. Zoican (2023), Retail trading and Analyst Coverage. Journal of Financial Markets, vol. 66, 100849.

Royer, J. (2023). Conditional asymmetry in Power ARCH(∞) models. Journal of Econometrics, 234(1),178-204.

Under review

Khomyn M., T. J. Putniņš and M. Zoican, The Value of ETF Liquidity, Working Paper, 2nd round Revise and Resubmit at Review of Financial Studies, Best paper semifinalist (Microstructure), Financial Management Association 2020

Working papers

Ain Tommar S. and S. Darolles, Permanent capital, permanent struggle? New evidence from listed private equity, Working Paper.

Ain Tommar S., S. Darolles and E. Jurczenko, The Geography of Private Equity Returns, Working Paper.

Benoit S., O. Couperier, J. Leymarie, and O. Scaillet, Elicibility of Market-Based Systemic-Risk Measures, Working Paper.

Billio, M., M. Costola, S. Darolles, and L. Pelizzon, Measuring the relationship between ESG factors and firm's credit risk in Europe, Working Paper.

Boeckelmann L, and A. Stalla-Bourdillon, Structural Estimation of Time-varying Spillovers: an Application to International Credit Risk Transmission in the Euro Area, Working paper Banque de France.

Book A., J. Imbet, M. Reinke and C. Sala, The forecasting power of short-term options, Working paper.

Briere M., C.-A. Lehalle, T. Nefedova, Tamara and A. Raboun, Stock Market Liquidity and the Trading Costs of Asset Pricing Anomalies. Université Paris-Dauphine – PSL Research Paper, SSRN No. 3380239.

Brousse C., Môme, N., Saillard, M. and A. Stalla-Bourdillon, [The impact of energy shocks on financial stability in the context of the 2022 episode](#). *Bulletin de la Banque de France*, (249).

Brown D., S. Kovbasyuk and T. Nefedova, On the Origin of IPO Profits, Working Paper.

Brownlees C., Darolles S., Le Fol G., Liquidity cascades, Working paper.

Brownlees C., Darolles S., Le Fol G., and B. Sagna, Forecasting Intra-daily volume in large panels of assets for basket VWAP trading, Working paper.

Calamia A., Deville L. and F. Riva, The Provision of Liquidity in ETFs: Theory and Evidence from European Markets, Working Paper.

Cantin, L., Francq, C., and J.M. Zakoïan, Estimating Systemic Risk Measures, Working Paper 2022-11, CREST.

Chan H., A. Landier and Y. Wang, Currency and Stock Returns: An Example of Market Inattention, Working Paper.

Coadou J. and S. Darolles, Does ESG Matter More than Tracking Error ?, Working Paper.

Cookson J.A., C. Fox, J. Gil-Bazo, J. Imbey and C. Schiller, Social Media as a Bank Run Catalyst, Working Paper.

Couperier O., C. Francq and J.-M. Zakoïan, Daily volatility forecasting using intraday returns and functional covariates, Working Paper.

Couperier O. and J. Leymarie, "Backtesting expected shortfall via multi-quantile regression", Working paper.

Dare W., Darolles S., Lambert M., and G. Monarcha: The Missing Link between Active and Passive Management, Working paper.

Darolles S., Deni, G, and G., Le Fol, Timing Equity Risk Premia via a NowCast Indicator, Working paper.

Darolles S., Faverjon, A., and M., Lambert, Analysts' Recommendations and ESG ratings: Evidence of reverse causality, Working paper.

Darolles S., He, Y., and G., Le Fol, Understanding the effect of ESG scores on stock returns using mediation theory, Working paper.

Darolles S., and G. Roussellet, Managing hedge fund liquidity risks, working paper.

Eisele A., T. Nefedova, Tamara and G. Parise, Are Star Funds Really Shining? Cross-Trading and Performance Shifting in Mutual Fund Families, BIS Working Paper No. 577, Available at SSRN 2831690.

Evans R., T. Nefedova and G. Parise, Front-trading and Information Environment in Mutual Fund Families. Working paper.

Franco C., J. Royer, and J.-M. Zakoian. A multivariate ARCH(∞) model with exogenous variables and dynamic conditional betas. Working paper.

Garriott C., V. van Kervel and M. Zoican, The queuing friction in limit order book markets, Working paper.

Gil-Bazo J., and J.F. Imbet, Tweeting for Money: Social Media and Mutual Fund Flows, Working paper.

Giroux T., J. Royer, and O.D. Zerbib. Empirical asset pricing with score-driven conditional betas, Working paper.

Gourieroux C., and J., Jasiak, Generalize Covariance-Based Inference for Models Partially Identified from Independence Restrictions, Working Paper.

Gourieroux C., and J., Jasiak, Nonlinear Forecasts and Impulse Responses for Causal-Noncausal (S)VAR Models, R&R, Journal of Econometrics.

Gourieroux C., and J., Jasiak, Structural Modelling of Dynamic Networks and Identifying Maximum Likelihood, Working Paper.

Gourieroux C., J. Kim, and N. Meddahi, Stationary Ultra Long Run Component, R&R, Journal of Econometrics.

Gourieroux C., and Q. Lee, Nonlinear Impulse Response Functions and Local Projections, Working paper.

Gourieroux C., Y., Lu, and A. Monfort, Ultra Long Run Term Structure Models, Working Paper.

Imbet J. F., Stroke of a Pen: Investment and Stock Returns under Energy Policy Uncertainty, Working paper.

Imbet J. F. and M. Ortiz, Private Firms and Offshore Finance, Working paper.

Imbet J. F., M. Ortiz and V. Tena, How are the tax-evasion savings distributed?, Working paper.

Jourde T., and A. Stalla-Bourdillon, Environmental Preferences and Sector Valuation, Working paper, Available at SSRN 4481313.

Kokololova O., T. Nefedova and L. Ye, Information Flows in Brokerage Business, Working Paper.

Langlois H., Forecasting Portfolio Weights, Funded Project 2019, Webinar and Working Paper.

Lehar A., D. Parlour and M. Zoican, Liquidity Fragmentation on Decentralized Exchanges, Working Paper.

Marta T. and F. Riva, Do ETFs increase the co-movements of their underlying assets? Evidence from a switch in ETF replication technique, Working paper.

Martineau C. and M. Zoican, A machine learning measure of analyst report contribution, Working paper.

Menkveld A., E. Pagnotta, and M. Zoican, Does Central Clearing Affect Price Stability? Evidence from Nordic Equity Markets, Working paper, R&R at Journal of Financial Economics.

Mero G, False discoveries in Hedge Fund performance and business cycles, Working Paper.

Mero G. and H. N. Ngankam, Sentiment and Equity Return-Liquidity Relationship: Does Noise Trading Risk Matter?, Working Paper.

Nefedova T., G. Parise and M. Zoican, ETF fee competition and security lending, Working Paper.

Nefedova T., Tippers and tippees: Brokers' pre-release of price-sensitive information to their VIP clients, Working paper.

Sagna B., Learning From Heightened Equity Premium, Job Market Paper.

Sagna B., "Intra-daily trading volumes and VWAP strategy: evidence from a horse race, Working Paper.

Stalla-Bourdillon A., Stock Return Predictability: comparing Macro- and Micro-Approaches, Working

paper.

Xiouros C., and P. Ehling, Cyclical beta, Funded Project 2019, under the name of “Asset Pricing with Endogenous beta”.

Zoican M., Asset management at the zero-fee bound, Working Paper.

Reports, books, press articles, etc.

Chatelais, N., Stalla-Bourdillon, A., and M. Chinn (2023), cité dans [There's an Upbeat Signal Buried Beneath the Stock Market's Surface](#)”, Bloomberg, January 18.

Darolles, S., “Scores ESG : quelles questions se poser avant de les utiliser ?” Option Finance, 24 November 2023.

Faverjon, A., Hardy, C., and M. Lambert (2023). A systematic literature review on financial stock performance of sustainable investments: Bridging the gap between empirical evidence and recent theoretical models. In *The Routledge Handbook of Green Finance* (pp. 463-484). London, United Kingdom: Routledge.

Ishii, K., Macaire, C., & Stalla-Bourdillon, A., [China has reduced its energy bill thanks to Russian oil discounts](#). *Blog Banque de France*, September 27, 2023.

Lambert, M., and A. Scivoletto, (2023), Dry Powder in Private Equity. In *The Palgrave Encyclopedia of Private Equity*. Springer International Publishing. September.

Gillain, C., Ittoo, A., and M. Lambert (2023). Detecting Equity Style Information Within Institutional Media. In *Lecture Notes in Operations Research*. Springer International Publishing.

MAJOR COMMUNICATIONS RELATED TO THE RESEARCH PROGRAM

Major academic conferences, invited speaker, etc.

QMI's researchers have presented their work at several conferences and seminars:

"Agency costs of dry powder in LBO funds", Lambert, M., Scivoletto, A., and T. Tykvova

- Financial Management Association Annual Meeting, Chicago, United States, October 10.
- Corporate Finance Days, Lille, France, September 21-22.
- EDHEC Research Seminar, Lille, France, November 22.

"Analyst recommendations and ESG ratings : Evidence of reverse causality", Darolles S., A. Faverjon, and M. Lambert

- Finance Seminar at Université Paris Dauphine – PSL, September 7.

"Behavioral differences regarding sustainability – A comparison of U.S. and European investors", Hardy, C. and M. Lambert

- PhD Workshop in Sustainable Finance, Liège, Belgium, March 14.
- HEC Research Day 2023, poster presentation, May 4.

"Deep learning, recommandations des analystes et ratings ESG", Darolles S., and A. Faverjon

- Club des Techniques Quantitatives de l'AFG, Paris, October 17.

"Does ESG Matter more than the Tracking Error", Coadou J., and S. Darolles

- Computational and Financial Econometrics (CFE 2023), Berlin Germany, 17-19 December.

- Doctoral seminar, Université Paris Dauphine – PSL, France, June 1st.

"Disagreement on Environmental, Social, and Governance reduces analysts forecasting ability", Prunier, L., Lambert, M., and W. Torsin

- HEC Liège Research day - Poster session, Liège, Belgium, May 4.
- PhD Workshop in Sustainable Finance, Liège, Belgium, March 14.

"Do companies with strong ESG scores “really” outperform? Evidence of selection and survivorship biases in ESG ratings", Faverjon, A. and M. Lambert

- 39th International conference of the French Finance Association (AFFI), Bordeaux, France, June 5-7
- Corporate Finance Days, Lille, France, September 21-22.

"Do ETFs Increase the Comovements of Their Underlying Assets? Evidence from a Switch in ETF Replication Technique", Marta T. and F. Riva

- 14th Annual Hedge Fund Research Conference, Paris France, January 26-27.

"Environmental Preferences and Sector Valuation", Jourde T. and A. Stalla-Bourdillon

- Conference on Climate and Energy Finance, Hannover, Germany, November 4.

"Estimating conditional systemic risk measures in semi-parametric volatility models", C. Francq, and J.-M. Zakoïan

- seminar of the Research Center for Statistics, University of Geneva, Geneva, Switzerland, March 3.

"Finite Moment Testing in a General Class of Nonlinear Time Series Models", Francq C., and J.M. Zakoïan

- Conference on Robust Econometric Methods in Financial Econometrics, Copenhagen Denmark, September 7-8.
- Computational and Financial Econometrics (CFE 2023), Berlin Germany, 17-19 December.

"Fragmentation and optimal liquidity supply on decentralized exchanges", A. Lehar, C. Parlour, and M. Zoican:

- Financial Intermediation Research Society, Vancouver, Canada, June 2-4
- UNC Junior Faculty Finance Conference, Chapel Hill NC, United States, August 10-11
- Northern Finance Association Meeting, Toronto, Canada, September 8-10
- 5th Tokenomics, New York NY, United States Conference, October 27-28
- WBS Gillmore Centre Conference on DeFi & Digital Currencies, London, United Kingdom, October 27-28

"Improving the robustness of Markov-switching dynamic factor models with time-varying volatility", Aumond R., and J. Royer

- Computational and Financial Econometrics (CFE 2023), Berlin Germany, 17-19 December.

"Identifying fundamental shocks on the European natural gas market", Buquet M.-A., and A. Stalla-Bourdillon

- 24th IWH Workshop: Commodity Prices and Macroeconomic Developments, Halle, Germany, December 12.
- National Central Banks International Economy Meeting, Paris France, October 10.

"Inference on conditional systemic risk measures", Francq C., B. M. Kandji and J-M Zakoïan.

- the 10th days for Econometrics and Finance, Rabat Morocco, April 26-28.

- XIIIth workshop in Time Series Econometrics, Zaragoza Spain , Invited speaker, March 11-12.

"Inference on multiple component GARCH Models without any Small-Order Moment", Francq C., and J.M. Zakoian

- Quant. Finance and Financial Econometrics (QFFE), Marseille France, June 6-7.
- Workshop "Non-stationarity, cyclostationarity and applications", Nanterre France, June 5-7.
- 10th Italian Congress of Econometrics and Empirical Economics (ICEEE), Cagliari (Italy), May 26-28.

"Long Run Risk in Stationary Structural Vector Autoregressive Models", Gouriéroux C., and J. Jasiak

- the 10th days for Econometrics and Finance, Rabat Morocco, April 26-28.

"On the Origin of IPO Profits", Nefedova T., D. Brown and S. Kovbasyuk

- Brown Bag Seminar, University of Vienna, Austria, Invited seminar, March 29.
- Research Seminar, HEC Liège, Belgium, Invited seminar, May 30.

"Social Media as a Bank Run Catalyst", Cookson J.A., C. Fox, J. Gil-Bazo, J. Imbet and C. Schiller.

- ACPR Chaire Bank of France Internal Seminar, Paris France, December 13.
- Bank of Mexico, 5th Biennial Conference on Financial Stability, Mexico City, Mexico, November 1.
- USC, Second Annual Conference on Social and Behavioral Finance, Palos Verdes California USA, November 16.
- NBER Summer Institute, Boston USA, July 12.
- Cleveland Fed, Fed Financial Stability Conference, Cleveland Ohio USA, November 16-17.
- CEMFI, Internal Seminar, Madrid Spain, November.
- Fed Board, CEBRA Conference, Washington USA, November 13-14.
- Texas Christian University, Texas USA, October 7.
- FRB Boston, Stress Testing Conference, Boston USA, October 19.
- Wharton, Liquidity and Financial Fragility Conference, Philadelphia USA, October 6.
- FDIC, Internal Seminar, Washington USA, September 2023.
- Single Resolution Board (Brussels) , Internal Seminar, Brussels Belgium, May 2023.
- ECB, Internal Seminar, Frankfurt Germany ,September 2023.
- Bundesbank, Internal Seminar, Frankfurt Germany, October 2023.
- University of Luxembourg, Internal Seminar, Luxembourg, June 2023.

"Stock Return Predictability: comparing Macro- and Micro-Approaches", Stalla-Bourdillon A.

- 71st Congress of the French Economic Association, Paris, France, June 14.

"The Geography of Private Equity Returns", Ain Tommar S., S. Darolles and E. Jurczenko

- Lapland Investment Fund Summit, Levi, Finland, March 21-22.
- 39th International conference of the French Finance Association (AFFI), Bordeaux, France, June 5-7

"Tweeting for Money: Social Media and Mutual Fund Flows", Gil-Bazo J. and J. Imbet

- FMA Annual Meeting Chicago, Chicago USA, October 2023.
- Midwest Finance Association, Chicago USA, March 2023.
- University of Edinburgh Economics of Financial Technology Conference, Edinburgh, Scotland, July 2023.

"Who can better push firms to go "green"? A look at ESG effects on stock returns", Darolles S., Y. He and G. Le Fol

- 39th International conference of the French Finance Association (AFFI), Bordeaux, France, June 5-7

Events organized by the program:

Organization of two sessions at the [Computational and Financial Econometrics, December 2023, Berlin](#)

- Financial Times series, Organized session C0154

C. Francq, CREST France and **J. M. Zakoïan** Chairman and organizer, CREST, Members of the QMI,

- Testing the zero-process of intraday financial return for non-stationary periodicity, **G. Sucarrat**, BI Norwegian Business School, Norway
- Detection of breaks in weak location time series models with quasi-Fisher scores, **C. Francq**, CREST France
- Finite moments testing in a general class of nonlinear time series models, **J. M. Zakoïan**, CREST and QMI, France.
- Improving the robustness of Markov-switching dynamic factor models with time-varying volatility, **J. Royer**, CREST and QMI, France
- Fractional integration in mixed causal-noncausal models, **S. Telg**, Vrije Universiteit Amsterdam, Netherlands

- Quantitative finance, Organised session C0372

S. Darolles, Organizer and **G. Le Fol**, Chairman and Organizer, Université Paris Dauphine - PSL, Members of the QMI

- Learning the predictive density of mixed-causal ARMA processes for portfolio optimization, **A. Thomas**, Université Paris Dauphine – PSL
- Does ESG matter more than the TE?, **J. Coadou**, Université Paris Dauphine – PSL and QMI
- Yes, Virginia, There Is [More Than] Hope: Twenty years of sector rotation with Shiller's CAPE® Ratio, **L. Dumontier**, Université Paris Dauphine – PSL and QMI

[14th Annual Hedge Fund Research Conference, Paris France](#)