QUANTVALLEY /FDR RESEARCH INITIATIVE

Activities and Events organized by the Research Initiative (QMI) — ANNUAL REPORT

This document describes the activities organized by the Quantitative Management Research Initiative (QMI) during its second year of existence.

*Draft January 2014*

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QUANTVALLEY /FDR RESEARCH INITIATIVE
"QUANTITATIVE MANAGEMENT INITIATIVE (QMI)"

1. INTRODUCTION

Hosted within the Fondation du Risque (FdR) and with the support of the Institut Louis Bachelier (ILB), the work conducted within the framework of this Research Initiative is principally carried out by teams from the University Paris-Dauphine and the ENSAE (Ecole Nationale de la statistique et de l'administration économique). It benefits from partnerships with GFI, UBS and QUANTVALLEY.
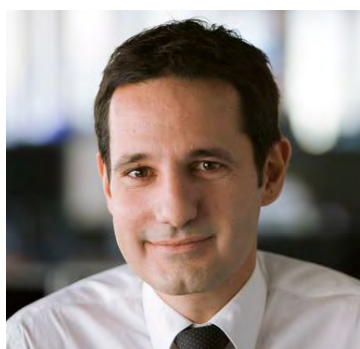
From left to right : *Gaëlle Le Fol (Dauphine and CREST, Scientific Director of the QMI), Serge Darolles (Dauphine and CREST), Christian Gouriéroux (CREST), Fabrice Riva (IAE de Lille, General Secretary of the QMI), Jean-Michel Beacco (Fondation du Risque), Arnaud Chrétien (QUANTVALLEY), Marc Souffir (GFI), Patrice Lacourarie (UBS)*

1.1. The objectives of the QMI

In the post-financial-crisis context, Quantitative Management professionals from the French Financial sector came together in 2010 to create QuantValley in order to promote Quantitative Finance and its benefits in terms of research, risk management and value creation for investors. Today, the association has been joined by two important partners, GFI and UBS, and 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. Thanks to its support, the Quantitative Management Initiative (QMI) was born in early 2012 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 of the partnerships 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.

1.2. Research axes of the QMI

Amongst the research areas of most interest to the QMI are:

Statistical Signal Processing

Application of signal treatment to the estimation of factorial models, the detection of outliers, the filtering of trends and the robust estimation of Kalman models …

Concretely, in this area, Serge Darolles, Patrick Duvaut and Emmanuelle Jay are published with Wiley the first volume of the QuantValley collection (see page 17). A project by Emmanuelle Jay has also received in 2012 funding of 5,000 euros from the QMI (page 21). And a « Trend Filtering and Statistical Signal Processing » session including Emmanuel Bacry has been organised by the QMI for the Computational Financial Econometrics (CFE) conference in London on the 14, 15 and 16 December (page 20). Emmanuel Bacry has also presented his research on the topic at the Forum GI, Paris, 21 March and the first QUANVALLEY/QMI Conference, New York, 5-6 June.

Algo and/or High frequency trading

Optimisation of the VWAP (Volume Weighted Average Price) price replication algorithms, link between the speed of placing orders on the market and the arrival of information, liquidity trade-offs, maximum trading capacity.

Serge Darolles and Gaëlle Le Fol are working on dynamic methods of curve prediction for intraday volume. The goal is to improve the VWAP replication algorithms (page 13). Gaëlle Le Fol is working on quantifying profit capacity as a function of exchange frequency and trading horizon. The dataset comprises all transactions of the Futures markets. The goal is to propose an estimate of the size of the cake for any strategy characterized by its trading frequency and trading horizon. Mathieu Rosenbaum is working on the stake of recent regulatory changes and of the financial crisis on market microstructure (page 13). Dale Rosenthal has also received in 2012 funding of 5,000 euros by the QMI for his work on performance measures for high frequency trading strategies (page 20). Vincent van Kervel and Albert Menkveld, from VU University of Amsterdam have received in 2013 funding of 5,000 for their project untitled Predatory trading in equity markets (page 17).

Listed market liquidity

Serge Darolles, Jérémy Dudek and Gaëlle Le Fol are working together on a new measure of market liquidity called Mliq. Serge Darolles, Gaëlle Le Fol and two co-authors have also started a new research project on liquidity

adjusted conditional risk measure. A first version of this research was presented in May at the Financial Econometric Conference, Toulouse, and in September at the Methods in International Finance Workshop, Namur. A « liquidity risk » session including Mathieu Rosenbaum has be organised by the QMI in the context of the Computational Financial Econometrics (CFE) in London on the 14, 15 and 16 December (page 22). A QUANVALLEY/QMI workshop has also been organized in London the 16 December with the collaboration of NYSE Euronext and Imperial College London. Mathieu Rosenbaum and Serge Darolles presented two recent QMI research papers during this workshop. Fabrice Rivais for his part, with two co-authors, working on ETF liquidity. He has presented a research paper on behalf of the QMI at several conferences during 2013 and has published it in "Bankers, Markets and Investors" (page 14).

Contagion and funds flows

A measure of liquidity comovements between the currencies of various emerging economies, link between currency liquidity and liquidity of dollar debt markets, impact of hedge fund flows on contagion phenomena between countries.

Several teams are working on this theme. Christian Gouriéroux and Patrick Gagliardini are working on modelling hedge fund default due to contagion effects. The article has been presented at the ACPR seminar in November. Serge Darolles, Simon Dubecq and Christian Gouriéroux have launched a new research project on the Contagion analysis in the banking sector. Serge Darolles and Christian Gouriéroux will publish with Wiley the second volume of the QuantValley collection (page 17) Does one observe contagion mechanisms, or simply the influence of market factors? Jérémy Dudek and Gaëlle Le Fol are working on modelling contagion and liquidity phenomena. How can the inflow of different asset classes, in principle unrelated, recorrelate returns? This is empirically tested in emerging sovereign debt markets in local currency (pages 13 and 15). Mardi Dungey and Eric Renault have also received funding of 10,000 euros by the QMI for their project on contagion modelling (page 17).

Risk disaggregation and portfolio allocation

Decomposition of a portfolio's asset's risk contribution into systematic risk contribution and idiosyncratic risk contribution, method of allocation controlling the relative proportion of either contribution. Application to index and market-neutral portfolio creation.

Christian Gouriéroux and Emmanuelle Jay take a new look at a well-known approach: risk parity. Parity is obtained for any form of risk measure (not only volatility) and by identifying the common and specific components of risk. Emmanuel Jurczenko and Jérome Teiletche are working on the second volume of the QuantValley collection, published with Wiley, the theme of which is also risk parity (page 17). These two research papers were presented during the first QMI/QUANTVALLEY workshop organized in Geneva in September. The next workshop organized in May 2014 in Venice will cover the same topic.

Directly Related to this subject, Dong Lou and Christopher Polk, from London School of Economics have received in 2013 funding of 5,000 euros by the chair to work on the booms and busts of beta arbitrage: measuring the extent of the low-beta crowd (page 17).

Higher-order moments and portfolio allocation

Taking into account higher-order moments in the construction of optimal portfolios. Factorial approach applied to the estimation of higher-order components.

Emmanuel Jurczenko and Mikael Rockinger are working on the extension of factorial approaches to higher-order moments (skewness, kurtosis). They have shown that portfolios constructed with the information contained in these moments outperform portfolios constructed without this information.

Trend Following Strategies

Robert Kosowski and Andreas Baltas from Imperial College have received in 2013 funding of 10,000 euros by the chair to work on Momentum strategies in futures markets and trend-following funds (page 17).

Machine learning & Classification techniques with application to trading systems

A research team from the University of Rotterdam headed by Professor Micheal McAleer has received in 2012 funding of 10,000 euros by the chair to work on Artificial Intelligence approaches applied to the analysis of information diffused through traditional channels (Reuters news). This information is analysed so as to rank assets from various investment universes from best to worst (page 20).

Impact of quantitative trading on the economy

A senior research team from the University of Cergy has received in 2012 funding of 10,000 euros for a research project working on a model of mortgage default risk (page 20).

New sources of information (Google, Twitter, ...)

The University of Rotterdam's project (mentioned above) also relates to this theme.

1.3. The QMI's organization

The steering committee_____

The steering committee reviews, monitors and prioritizes major QMI projects.

Scientifique Director

      Gaëlle Le Fol, Professor, Université Paris-Dauphine and CREST

General Secretary

      Fabrice Riva, Professor, IAE de Lille

Researchers from l'ENSAE and Université Paris-Dauphine

      Serge Darolles, Professor, Université Paris -Dauphine

      Christian Gouriéroux, Professor, CREST-ENSAE ParisTech and Université de Toronto

      Elyès Jouini, Professor, Université Paris-Dauphine

Other Members

      Emmanuel Bacry, CNRS and Ecole Polytechnique

      Emmanuel Jurczenko, Professeur associé, ESCP Paris

      Mathieu Rosenbaum, Professeur, Université Paris VI

The Advisory Board_____

The Advisory board assists the Steering Committee in its supervising tasks over the activities of the project. The advisory Board members are:

Representing UBS : Patrice Lacourarie

Representing GFI : Marc Souffir

Representing QUANTVALLEY : Arnaud Chrétien and Serge Darolles

Representing ENSAE : Antoine Frachot

Representing the Université Paris-Dauphine : Laurent Batsch

Representing the Louis Bachelier Institut: Stéphane Buttigieg

Representing the Risk Fondation: Jean-Michel Beacco

Qualified Person: Michel Crouhy (Natixis)

International Experts: René Garcia (Edhec), Michael Rockinger (University of Lausanne), and Ronnie Sadka (Boston College)

The secretariat_____

Pauline de Saint Quentin, the secretary of QMI can be contacted at contact@qminitiative.org or pauline.desaintquentin@dauphine.fr or by telephone: +33 1 41 16 76 19.

The QMI's researchers_____
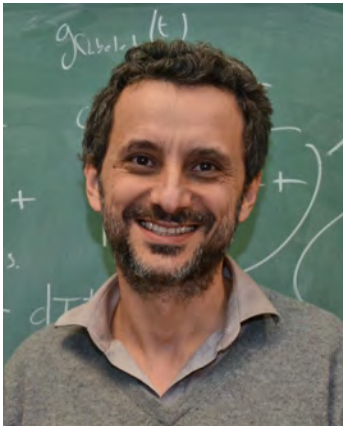
E. Bacry, CNRS and Ecole Polytechnique

J. Dudek, CREST and Université Paris-Dauphine

P. Duvaut, Telecom Paristech
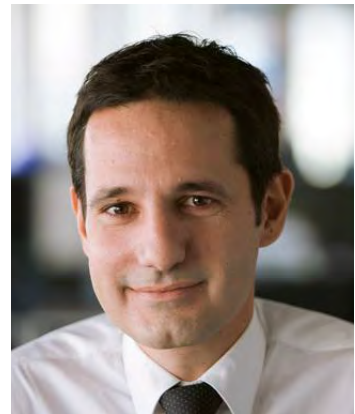
S. Darolles, Université Paris - Dauphine

C. Gouriéroux, CREST and Toronto University

J.-M. Zakoïan, CREST and University Lille 3.

E. Jay, QamLab

E. Jouini, Université Paris - Dauphine

E. Jurczenko, ESCP Europe

G. Le Fol, Université Paris - Dauphine and CREST

G. Mero, Université de Cergy-Pontoise

F. Riva, IAE de Lille

M. Rosenbaum, UMPC and Ecole Polytechnique

Akindynos-Nikolaos Baltas, Visiting Researcher, Imperial College, Quantitative Analyst at UBS Investment Bank

D.E. Allen, Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam, The Netherlands.

Mardi Dungey, School of Economics and Finance, University of Tasmania, Australia

D. Keenan, Professor of Finance, Université de Cergy-Pontoise

Robert Kosowski, Professor, Center for Hedge Fund Research & Risk Management Laboratory at Imperial College Business School

Dong Lou, Financial Markets Group, London School of Economics

M. McAleer, Professor of Quantitative Finance, Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam

Albert Menkveld, Professor, VU University of Amsterdam

Christopher Polk, Professor, Financial Markets Group, London School of Economics

D. Rosenthal, Assistant Professor, Department of Finance, University of Illinois at Chicago, USA

Eric Renault, Professor, Brown University, USA

Abhay Kumar Singh, PhD (Finance), MBA, B. Tech (I T)

Vincent L. van Kervel, VU University of Amsterdam

3. RESEARCH ACTIVITIES

This research initiative aims to be a means of exchange and reflexion where research themes emerge naturally, and become the starting point of research articles in the best international journals. The QMI must also be able to create a research community around themes of interest to management companies by calling for research projects nationally and internationally and by reinforcing the QMI member teams by recruiting research assistants and publishing doctoral contracts.

3.1. Research Publications

- Date: 2013
- Themes: Quantitative Management

3.1.1. Working papers

Abergel F., C.-A. Lehalle and M. Rosenbaum, (2013) : "Understanding the stakes of high frequency trading", Institut Louis Bachelier.

Allen, D.E., McAleer, M. and Singh A.K., An entropy based analysis of the relationship between the DOW JONES Index and the TRNA Sentiment series. Working paper.

Allen, D.E., McAleer, M. and Singh A.K., Daily Market News Sentiment and Stock Prices. Working Paper.

Auray,S., and C., Gourieroux (2013): "Procyclicite des regulations Financieres",CREST Working Paper.

Bacry E., and J.-F. Muzy, Hawkes model for price and trades high-frequency dynamics, Working paper, submitted to SIAM Journal of Financial Mathematics.

Baltas A.-K., and R. Kosowski, Momentum Strategies in Futures Markets and Trend-following Funds. Mimeo.

Becam, A., Darolles. S. and Le Fol, G., Smoothed Returns and Managers' skills, Working paper.

Borgy, V., Idier, J. and Le Fol, G., Liquidity Problems in the FX market: Ask for the BIL, Working paper SSRN.

Calamia, A., Deville L. and Riva, F., Liquidity in ETFs: What really Matters?, Working Paper.

Dayri, K. and Rosenbaum, M., Large tick assets: implicit spread and optimal tick size, Working paper.

Darolles, S. Dudek, J. and Le Fol, G., MLiq a Meta Liquidity Measure, working paper Université Paris - Dauphine.

Darolles,S., Gagliardini,P., and C., Gourieroux (2013):" Survival of Hedge Funds: Frailty vs Contagion", under revision Journal of Finance.

Darolles, S., Gourieroux, C. and Jay, E., Robust Portfolio Allocation with Systematic Risk Contribution Restrictions (October 25, 2012). Working paper SSRN. Submitted to Statistics & Risk Modelling.

Darolles S., and Le Fol, G., Trading Volume and Arbitrage. Working Paper.

Darolles S., Le Fol, G. and Mero G., The liquidity Part of Volume. Working paper SSRN. Submitted to Journal of Banking and Finance.

Darolles S., G. Le Fol, and Mero G., Tracking Illiquidities in Intradaily and Daily Characteristics. Working paper SSRN.

Darolles, S. and Vaissié, M., The Benefits of Dynamic Risk Management: Mitigating Downside Risk Without Compromising Long-Term Growth Prospects, Working paper SSRN.

Dungey, M. and E. Renault, Identifying Contagion. Mimeo.

Duvaut, P. and Jay, E., ODERIM (Outlier Detection for Risk Management), Mimeo.

Gagliardini,P.,Gourieroux,C., and M., Rubin (2013):" Positional Portfolio Management', Mimeo.

Gouriéroux, C. and Gagliardini, P., Correlated Risks vs Contagion in Stochastic Transition Models, Working paper.

Gourieroux,C., and J.C., Heam:" Funding Liquidity Risk in a Regulatory Perspective",CREST DP

Gourieroux,C., Jasiak,J., and P., Xu:" Non tradable S&P 500 Index and the Prices of its Traded Derivatives",CREST DP 2013-05

Gouriéroux, C. and Monfort A., Allocating Systemic Risk in a Regulatory Perspective, Working paper. In revision for International Journal of Theoretical and Applied Finance.

Gourieroux,C., and J.M., Zakoian (2013): "Explosive Bubble Modelling by Noncausal Process",CREST DP 2013-04

Huang W., C.-A. Lehalle, and M. Rosenbaum, (2013) : "Simulating and analyzing order book data: The queue-reactive model", Working Paper.

Heinen, A., Keenan, D. and Kim M.-L., Contagious Defaults: Evidence from Subprime Mortgages, Mimeo.

Jurczenko E., T. Michel and J. Teiletche, 2013, "Generalized Risk-Based Investing", Working Paper SSRN.

Lou D., and C. Polk, The Booms and Busts of Beta Arbitrage: Measuring the extent of the Low-Beta Crowd. Mimeo.

Menkveld, A. and V. van Kervel, Predatory Trading in Equity Markets. Mimeo.

Rosenbaum, M. and Tankov, P., Asymptotically optimal discretization of hedging strategies with jumps, working paper.

Rosenthal D. W. R., Trading-Related Skill Across Investment Funds, Mimeo.

3.1.2. Published Papers

Calamia A., L. Deville, F. Riva, "Liquidity in European Equity ETFs: What really matters?", Bankers Markets & Investors, 124 (2013) 60-73.

Darolles,S., and C., Gouriéroux (2013): 'Effects of Management and Provision Accounts on Hedge Fund Returns;Part 1,the High Water Mark Scheme, forthcoming eds. Huynh et al. Modelling Dependence in Econometrics,in Advances in Intelligent Systems and Computing,2151,22-45,Springer Verlag

Darolles, S., and C., Gouriéroux (2013) : " Effects of Management and Provision Accounts on Hedge Fund Returns,Part 2: The Loss Carry Forward Scheme", forthcoming, eds.Huynh et al. ,Modelling Dependence in Econometrics, Advances in Intelligents Systems and Computing,251,47-62,Springer Verlag

Gagliardini,P., and C., Gouriéroux (2013): " Granularity Adjustment for Risk Measures",International Journal of Approximate Reasoning,54,717-747

Gagliardini,P., and C., Gouriéroux (2013); " Correlated Risks vs Contagion in Stochastic Transition Models",Journal of Economic Dynamics and Control, 37, 2241-2269.

Gagliardini,P., and C., Gouriéroux (2013): "Efficiency in Large Dynamic Panel Models with Common Factors", forthcoming Econometric Theory.

Gouriéroux,C., Heam,J.C., and A., Monfort (2013):'Liquidation Equilibrium with Seniority and Hiden CDO", Journal of Banking and Finance,37,5261-5274.

Gouriéroux,C. and A., Monfort (2013):"Granularity Adjustment and Efficient portfolios",Econometric Reviews,32,449-468

Gouriéroux,C.,and A., Monfort (2013):'Linear Price Term Structure models",Journal of Empirical Finance,24,1-9.

Gouriéroux,C., and A., Monfort (2013):" Allocating Systemic Risk in a Regulatory Prespective",International Journal of Applied and Theoretical Finance,16,7.

Gouriéroux,C., Monfort,A., Pegoraro, F., and J.P.Renne (2013):"Regime Switching and Bond Pricing",Journal of Financial Econometrics, first published online, September 2013: doi: 10.1093/jjfinec/nbt019.

Gouriéroux,C., Monfort, A., and J.P. Renne (2013): " Pricing Default Events: Surprise,Exogeneity and Contagion", forthcoming Journal of Econometrics

Gouriéroux,C.,and J.M.,Zakoian (2013): "Estimation Adjusted VaR",Econometric Theory,29,735-770.

Rosenbaum M. and P. Tankov, (2013), "Asymptotically optimal discretization of hedging strategies with jumps", forthcoming in The Annals of Applied Probability.

Rosenbaum M. and J. Jacod (2013), "Quarticity and other functionals of volatility: efficient estimation", forthcoming in The Annals of Statistics.

Rosenbaum M., S. Delattre and C. Y. Robert, (2013), "Estimating the efficient price from the order flow: a Brownian Cox process approach", Stochastic Processes and Their Applications, 123 (7), p 2603-2619.

Rosenbaum M., M. Hoffmann and N. Yoshida (2013), "Estimation of the lead-lag parameter from non-synchronous data", Bernoulli, 19 (2), p 426-461.

3.1.3. Books

EMERGING MARKETS AND SOVEREIGN RISK, BOOK

Emerging Markets and Sovereign Risk
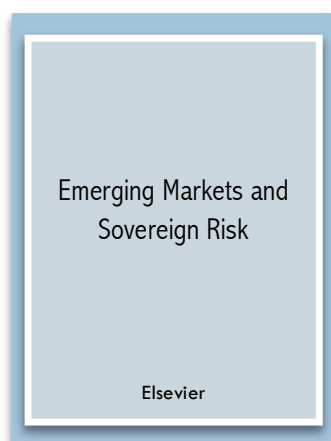
Elsevier

Contagion in Emerging Markets, forthcoming in N. Finch (ed), « Emerging Markets & Sovereign Risk », Elsevier.

S. Darolles, Université Paris – Dauphine, Member of QMI
J. Dudek, CREST and Université Paris – Dauphine, Member of QMI
G. Le Fol, Université Paris – Dauphine and CREST, Head of QMI

Abstract: Although an extensive literature exists on financial contagion, there is no consensual method for the identification of contagion episodes. By only considering the financial contagion as an increase of correlations between countries during crises, one indeed faces two well-known problems: (i) the consequence of returns heteroscedasticity on correlations, and (ii) the exogenous definition of the crisis periods' dates. As a consequence, we propose a methodology that tackles simultaneously these two problems and allows to studying the dynamic of the contagion

and thus, identifying contagion episodes. Our application concerns the emerging sovereign debt market. We highlight the simultaneous increase of individual sovereign risks and identify strong contagion episodes since the end of 2008.

GRANULARITY THEORY WITH APPLICATION TO FINANCE AND INSURANCE, BOOK

Granularity Theory with
Application to Finance
and Insurance

Cambridge University Press
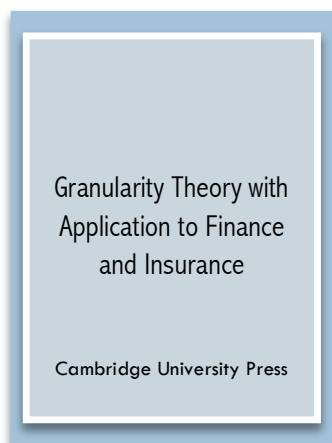
Granularity Theory with Application to Finance and Insurance, 400p, forthcoming Cambridge University Press
P. Gagliardini, University of Lugano and Swiss Finance Institute.
C. Gourieroux, University of Toronto and CREST, Member of QMI.

Abstract: The risk analysis in portfolios of credits, or life insurance contracts, is made difficult by the nonlinearities of risk models, the dependencies between the individual risks, and the large size of the portfolios, which can include several thousands of contracts. The granularity principle has been introduced in the Basel 2 regulation for credit risk to solve these difficulties when computing the reserves. The principle requires three steps. First, the modeling step considers a Risk Factor Model (RFM), which distinguishes the systematic risks from the unsystematic risks. Second, this model is applied to a virtual portfolio of infinite size, leading to the so-called Asymptotic Risk Factor Model (ARFM). This gives in general explicit formulas for the Value-at-Risk and other risk measures, and thus for the required capital. Third, for a portfolio of large but finite size, closed form approximations are derived from an expansion around the ARFM. This provides the granularity adjustment for the required capital. Very often the third step is omitted in the computation of regulatory reserves, which can induce a significant underestimation of the required capital.

The granularity principle can be applied to a variety of related problems. It can be applied for instance for efficient estimation in panel factor models with micro- and macro-dynamics, for improving macro-predictions from micro-data, or for pricing derivatives written on large portfolios. The aim of this book is to provide a first overview of granularity theory by following a progressive pedagogical approach.

SPECIAL ISSUE ON HEDGE FUNDS, SPECIAL ISSUE BANKERS, MARKETS AND INVESTORS

Special issue on hedge funds, guest editor for Bankers, Markets and Investors, March-April 2014
S. Darolles, Université Paris – Dauphine, Member of QMI

3.2. QUANTVALLEY/Wiley Monographs

- Date: 2013 - 2014
- Themes: Quantitative Management

The QUANTVALLEY collection, published by Wiley, aims to bring together a set of monographs, short and related to the themes of interest to quantitative management. The target audience is management company employees as well as Masters students specialising in Finance.

3.2.1. Multi-factor Models and Signal Processing Techniques: Application to Quantitative Finance

S. Darolles, Université Paris-Dauphine and CREST, QMI
P. Duvaut, ENSEA-ETIS, QMI
E. Jay, Chairman, QamLab, QMI
August 2013

3.2.2. Risk Parity

E. Jurczenko, ESCP Europe, Member of QMI
J. Teiletche, Lombard Odier
Forthcoming in 2014

3.2.3. Contagion phenomena: Applications to portfolio management, book

S. Darolles, Université Paris – Dauphine, Member of QMI
C. Gourieroux, University of Toronto and CREST, Member of QMI.

3.3. Call for projects

- Date: June 2013
- Themes: Quantitative Management

The four selected projects are:

1. *Identifying Contagion*, Professor M.Dungey, School of Economics and Finance, University of Tasmania, Australia and Professor E. Renault, Brown University, USA
2. *Momentum strategies in futures markets and trend-following funds*, Professor R. Kosowski, Center for Hedge Fund Research & Risk Management Laboratory at Imperial College Business School and A.-K. Baltas, Visiting Researcher, Imperial College, Quantitative Analyst at UBS Investment Bank.
3. *The booms and busts of beta arbitrage: measuring the extent of the low-beta crowd*, D. Lou, Financial Markets Group, London School of Economics and Professor C. Polk, Financial Markets Group, London School of Economics
4. *Predatory trading in equity markets*, V. van Kervel, VU University of Amsterdam and Professor A. Menkveld, VU University of Amsterdam.

The goal of this call for projects is to finance four types of publications with different research timescales. In the context of the QMI, the most important research topics are:

- Statistical Signal Processing
- Listed market liquidity
- Algo and/or High Frequency trading
- Contagion and funds flows
- Risk disaggregation and portfolio allocation

- High order moments and portfolio allocation
- Machine learning & Classification techniques with application to trading systems
- Impact of the quantitative trading on the economy
- New sources of information
- Behavioral finance, heterogenous agents and portfolio optimization
- Macroeconomic analysis and financial market behavior
- Etc.

The four above projects have been selected out of 72 propositions listed below.

The call for project was distributed on a large number of international sites, which enabled our research initiative to be better known via:

- The Journal of Finance website
- The Financial Economics Network's Professional Announcements network
- The l'ILB, la Fondation du Risque and CREST network

The QMI aimed to finance two small projects (5000 euros per projet) and 2 major projects (10 000 euros per project) for a total of 30 000 euros.

72 projects were received from 60 prestigious international institutions such as : Aarhus University, Boston College, Cass Business School, Concordia University, Cornell University, Ecole Polytechnique, EDHEC, European University Institute, EDHEC Business School, HEC, Harvard Business School, Imperial College, London Business School, Stockholm School of Economics, University Ca' Foscari of Venice, University of Tasmania, VU University of Amsterdam, Yale School of Management:

3.4. Completed projects

The completed projects are:

1. ***Machine Learning, Sentiment indices and Stock Market Prices***, Professor M. McAleer, Professor D.E. Allen and Dr. A.K. Singh, Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam, The Netherlands.

   Abstract : The focus of this study is to develop theories that can underpin information mining on the web to produce reliable information and to assess the impact of existing methods on the behaviour of market prices using techniques that are based upon the concept of entropy.

   The framework for the analysis will be provided by information theory. The major metrics will be constructed on the application of concepts related to Shannon entropy and cross entropy. The data for the study will be drawn from Thomson Reuters market data provided by The Securities Industry Research Centre of the Asia Pacific (SIRCA).

   Two working papers are online

   - "*An entropy based analysis of the relationship between the DOW JONES Index and the TRNA Sentiment series*",

   - "*Daily Market News Sentiment and Stock Prices*".

2. ***Contagious Defaults: Evidence from Subprime Mortgages***, Professor D. Keenan, Professor A. Heinen, and M.-L. Kim, Université de Cergy Pontoise, France.

   Abstract: The object of this project is to study default dependence and contagion amongst nonagency securitized mortgages in the US over the period 1998-2011. We will use a Cox proportional hazard model in a competing risk framework for default (and prepayment) and a copula model for the dependence amongst individual hazards. Dependence between defaults can occur because of geographical proximity, common economic conditions, which may be of either a local or economy-wide nature, the business cycle, interest rates, etc. We want to quantify the amount of this default dependence and investigate the reasons why such dependence occurs.

   Online working paper: "Contagion in Subprime Mortgage Defaults: a Composite Likelihood Approach"

3. ***Trading-Related Skill Across Investment Funds***, D. W. R. Rosenthal, Department of Finance, University of Illinois at Chicago, USA.

   Abstract: Many institutional traders split large orders into smaller orders sent over some time period. This schedule may be optimized to reduce price impact. I have developed performance metrics to assess how effective funds are at (i) executing these smaller orders, (ii) deciding when to wait for orders to be filled (i.e. market timing), and (iii) scheduling the smaller orders. The performance metrics have sound theoretical backing and let us separate trading-related performance from noise. I propose to use data on orders and trades for a selection of investment funds to characterize these skills. For the initial work, I will study: (i) the relative magnitudes of these skills, (ii) how these skills vary across funds, (iii) what fraction of firms seem to possess superior

trading-related skills, (iv) how firms' skills change over time due to learning, and (v) the savings in transactions costs which accrue to investors. For possible further work, I suspect this data would help answer further questions including: (vi) how firms' trading-related performance changes with macroeconomic factors, (vii) whether changes in trading-related skills result in fund inflows, (viii) the value of these inflows to the funds

4. **ODERIM (Outlier Detection for Risk Management)**, P. Duvaut and E. Jay, QUANTVALLEY.

   Abstract: ODERIM "Outlier Detection/Estimation and mitigation for RIsk Management and control, based on Advanced SSP methods, with a focus on extreme situations". The long lasting crisis situation since 2008 is corrupting financial data with an increasing number of extreme events (i.e. outliers). These outliers require being detected, processed and, if possible, anticipated in order to keep acceptable performance while limiting specific risks for either long-term management style or high frequency trading. The objective of the project is to improve and optimize statistical filtering techniques (such as Lq-regularized Kalman, MCMC algorithms, Particle filtering) to detect, estimate and mitigate the outliers that occur in financial data in order to avoid the contamination of the systematic exposures due to idiosyncratic (exogenous) extreme events.

4. RESEARCH EXPOSURE AND DIFFUSION

Over and above research production, the QMI aims to distribute quantitative management academic research throughout the scientific community but also towards quantitative management professionals (knowledge diffusion). To this end, the QMI's research will be presented in international conferences, within the framework of an annual conference addressed to academics and professionals. Furthermore, training (research applications) will be developed and the website will propose research articles and webinars than put that research into practice.

4.1. Call for Training course projects

In May 2012, two projects were selected but both groups finally decline. We have decided not to call again for courses.

The two selected projects are:

1. **Risk-based Allocation portfolios**, E. Jurczenko, ESCP Europe, HEC Lausanne and QMI.
   Objective: Traditional asset allocation methodologies have been severely challenged by the recent financial crisis. Furthermore, they appear of limited usefulness for practitioners as they lead to portfolios which emerge as both biased and non-robust. Risk-driven methods are gaining traction in the investor world. Starting from (seemingly) simple concepts such as diversification and risk budgeting principles, Risk-based investing comes out as a way to achieve more robust portfolios. The objective of this lecture is to give an overview of the underlying notions and tools, to review the theoretical properties of these portfolios and to provide both numerical and empirical applications for practitioners. All applications will be performed using Matlab software and real multi-asset datasets (Equity indexes, individual stocks and commodities).
   One day and a half to be scheduled in October-November 2013

2. **Commodities as an asset class**, J. Chevallier and F. Ielpo, Université Paris-Dauphine and DCV Asset Management.
   Objective: This course aims at providing to students and working professionals with the tools necessary to understand the linkages between financial markets (equities, bonds, FX) and

commodity markets (agricultural products, precious and industrial metals, energy). With an empirical perspective, the focus of the course is set on the training of the econometric tools adequate to model the linkages between financial markets, the macroeconomic environment, energy and commodity markets. The learning curve is accelerated by the resolution of several practical exercises on real-world data and programming sessions with the softwares R/Matlab/Eviews.

One day and a half to be scheduled in May-June 2013

4.2. Conference and seminar participation

4.2.1. Institutional Management FORUM, PARIS, 21-22 March 2013

In collaboration with the Institut Louis Bachelier (ILB), Morningstar ran the Financial Research and Innovation forum. The aim of this forum was to offer a point of contact between academia, technological innovation and practical applications, so as to encourage experts and practitioners to think about financial mechanisms in a new way. Two members of the RI participated in this initiative.

- Modélisation de la dynamique haute fréquence du prix et des transactions
  E. Bacry, CNRS, Ecole Polytechnique and Member of the QMI

- Méthodes Robustes de construction de portefeuilles
  S. Darolles, *Université Paris – Dauphine and Member of the QMI*

- M-Liq: une méta mesure de liquidité
  G. Le Fol, Université Paris - Dauphine and CREST, Scientific Director of the QMI

- Generalized-Based Investing
  E. Jurczenko, E., ESCP Paris and Member of the QMI.

4.2.2. 6th CSDA International Conference (CFE 2013)

Organization of sessions at the Computational and Financial Econometrics, London, UK, December 2013

   - Trend Filtering and Statistical Signal Processing, session CS17.

   S. Darolles, Chairman and organizer, Université Paris-Dauphine, Member of the QMI
   E. Jay, Chairman, QamLab, Member of the QMI

   - Model for price and trades high-frequency dynamics
   E. Bacry, CNRS, Ecole Polytechnique and Member of the QMI

   - *Liquidity Risk, session CS40.*

   G. Le Fol, Chairman and organizer, Université Paris – Dauphine, CREST, Scientific Director of the QMI
   S. Darolles, Organizer, Université Paris-Dauphine, Member of the QMI

   - Large tick assets: Implicit spread and optimal tick size
   M. Rosenbaum, UPMC, Member of the QMI

   - Liquidity risk estimation in conditional volatility models

S. Darolles, Université Paris - Dauphine, Member of the QMI

4.2.3. Seminar and conference participations

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

"Contagion analysis in the banking sector", with S. Dubecq and C. Gouriéroux
- Large Scale Factor Models in Finance, Lugano, 11-12 October 2013,
- 5th French Econometric Conference, Toulouse, 14-15 November 2013.

"Estimating the efficient price from the order flow: a Brownian Cox process approach", S. Delattre, C.Y. Robert and M. Rosenbaum, (Stochastic Processes and Their Applications),
- Quantitative Finance retrospective workshop, Fields Institute Toronto, October.
- Séminaire de Statistiques, TSE, October 2013,
- Statistics seminars, Columbia University, October 2013,
- Bernoulli satellite meeting: Asymptotic Statistics and Related Topics, Tokyo, September 2013,
- World Statistics Congress, Hong Kong, August 2013,
- Summer School "Greek Stochastics Epsilon", Kalamata, July 2013,
- Risk and Stochastics conference, LSE, May 2013,
- Workshop on Large deviations and asymptotic methods in finance, Imperial College London, April 2013,
- Statistique Asymptotique des Processus Stochastiques IX , Université du Mans, March 2013,
- Journée Mathématiques Financières , Université d'Evry, February 2013,
- Mathematical Statistics Seminar, University of Heidelberg, January 2013,
- Seminar MODALX, Université Paris X, January 2013.

"Funding Liquidity Risk", Gouriéroux C., and J.C. Heam
- CFE meeting,London, (December 15, 2013).

"Generalized Risk-Based Investing", Jurczenko E., T. Michel and J. Teiletche, (2013), QMI WP, (submitted to FAJ).
- Risk-Based Portfolio Construction, QMI/GFRI Workshop, September 26, 2013,
- Inquire Europe Conference 2013, Munich, October 27-29, 2013,
- CQA Asia Conférences 2013, Hong Kong, November 6-7, 2013,
- PensionPioneers 2013, Paris, November 14, 2013.

"Identifying SIFIs: Toward a Simpler Approach ", Sylvain B., J. Dudek and M. Sharifova,
- 3rd International Conference of the Financial Engineering and Banking Society (F.E.B.S), Paris.
- 7th International Conference of the CFE-ERCIM , London, December 2013.

"Large tick assets: implicit spread and optimal tick size", K. Dayri and M. Rosenbaum, (submitted),
- Liquidity risk and tick size conference, London, December 2013,
- CFE conference, London, December 2013,
- Financial Economics seminar, BI Oslo December 2013,
- Finance seminar, Columbia University, October 2013,
- QMI/Quant Valley conference, NYSE New York, June 2013,
- Financial Econometrics conference, TSE, May 2013,
- Séminaire du SAF, Université Lyon 1, February 2013.

"Limit theorems for nearly unstable Hawkes processes", T. Jaisson and M. Rosenbaum, (submitted),
- Statistics of high frequency data conference, Paris December 2013,

- Mathematical Finance seminar, ETH Zurich, November 2013,
- Recent Developments in the Statistics of high Frequency Data, TSE, November 2013.

"Liquidity contagion: A look at emerging markets", S. Darolles, J. Dudek and G. Le Fol
- 30th French Finance Association Conference, Lyon, May 2013,
- 6th Financial Risks international Forum, Paris, March 2013.

"Liquidity in European Equity ETFs: What really matters?", A. Calamia, L. Deville and F. Riva, QMI WP (in Bankers, Markets and Investors),
- EDHEC Risk Days London (Mars 2013).
- EDHEC Risk Days Singapore (Mai 2013).
- FEBS / LabEx-ReFi 2013 conference, Paris (Juin 2013).
- Quantitative Management Initiative Annual Conference, New York (Juin 2013).

"Liquidity risk estimation in conditional volatility models", S. Darolles, C. Francq, G. Le Fol and J.M. Zakoian
- Financial Econometric Conference, Toulouse, 17-18 May 2013
- Methods in International Finance Workshop, Namur, 23-24 September 2013
- CFE conference, London, 15 December 2013
- QMI/QuantValley Workshop on Liquidity Risk and Tick Size, London, 16 December 2013

"MLiq a meta liquidity measure", Darolles S., Dudek J. and G. Le Fol
- Forum GI, Paris, March 2013.
- Computational and Financial Econometrics (CFE'12), Oviedo, Spain, December 1, 2012.

"Pricing Default Events", Gourieroux,C., Monfort,A., and J.P.Renne (forthcoming in Journal of Econometrics)
- 6th Risk Forum,Paris, March 26, 2013,
- Econometric meeting Toulouse, May,17-18 2014

"Positional Portfolio Management", Gagliardini,P., Gourieroux,C., and M., Rubin
- ESEM meeting, August 2013,
- Large Scale Factor Models, Lugano, October,11 2013.Keynote speaker

"Robust portfolio allocation with risk contribution restrictions", S. Darolles, E. Jay and C. Gouriéroux
- Forum GI, Paris, 21 March 2013,
- 1st QuantValley/QMI Conference, New York, 25-25 June 2013,
- QMI/QuantValley Workshop on Risk Based Portfolio Allocation, Geneva, 25 September 2013,
- Think Tank PensionPionners, Paris, 28 November 2013.

"Survival of hedge funds: Frailty vs contagion", S. Darolles, P. Gagliardini and C. Gouriéroux
- Thailand Econometric Society Meeting, Chang Mai, January 11, 2014. keynote speaker,
- SOFIE meeting Singapore June 10-14 2013,
- Seminar ACPR, Paris, November 2013,
- ACPR Seminar, Paris, 5 November 2013.

"Understanding the stakes of high frequency trading", F. Abergel, C.A. Lehalle, and M. Rosenbaum, (Opinions et Débats (2), Institut Louis Bachelier),
- High frequency trading liquidity and stability conference, Paris December 2013.

4.3. Annual Conference

Every year, the QMI organises a conference in the autumn. Intended for quantitative management experts – academics, professionals and journalists – it will aim to combine the research undertaken by members of the QMI, projects financed by the QMI and research by internationally renowned researchers, by organising a guest session and presentation sessions for research articles. A roundtable will also be organised in which academics, journalists and professionals will be invited to take part in a debate.

Date, location: November 2012 (New York)

- Themes: Quantitative Management

The QuantValley/Quantitative Management Initiative (QMI)'s first objective is to favor synergies between quantitative management firms, academia and market authorities in order to achieve excellence in research. To optimize the cooperation between professionals and researchers, the initiative organizes workshops and conferences with the support of its academic partners, Université Paris-Dauphine and ENSAE- the French National School of Statistics and Administration. The first QuantValley/QMI Annual Research Conference will explore and present new findings on the following topics: Statistical Signal Processing, Market Liquidity, High Frequency Trading, Contagion and Systemic Risk, Risk Parity, and more generally all subjects dealing with Portfolio and Risk Management.

Venue :
NYSE, New York Stock Exchange
11 Wall Street New York,
NY 10005,
USA

253 persons were registered:
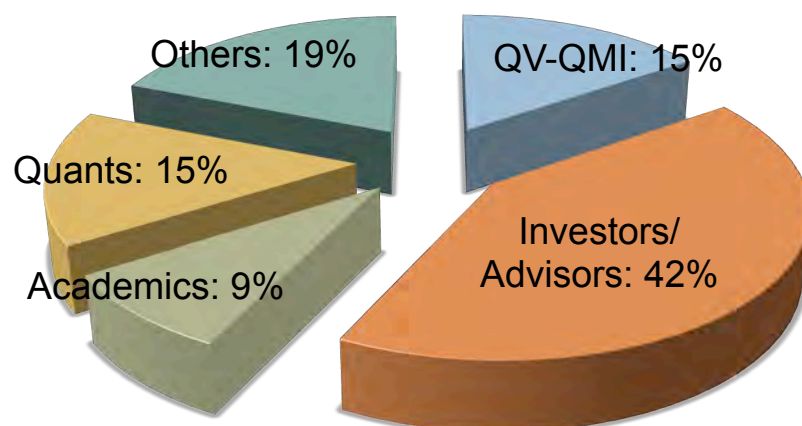
Due to the significant impact of Hurricane Sandy on New York City, we have taken the decision to postpone the event to a date in 2013.

The conference has been rescheduled in June 2013. 156 persons were registered.

Program 2013

Day One: June 25, 2013

8 : 30 am	Registration
9 : 00 am	Opening address by A. Chrétien (QUANTVALLEY, Aequam) and G. Le Fol (Université Paris – Dauphine, QMI)
9 : 30 – 10 : 30 am	Signal Processing & Machine Learning Session – "Microstructure noise, Market impact and Point processes", E. Bacry (CNRS, Ecole Polytechnique, Quantate Consulting, QMI). – "A Machine-Learning View of Quantitative Finance", S. Clémençon (Telecom ParisTech).
10 : 30 – 11 : 00 am	Coffee break
11 : 00 – 12 : 30 am	Liquidity Session – "Liquidity Risk and Security Prices", R. Sadka (Boston College). – "ETF liquidity: What really matters?", L. Deville and F. Riva (IAE de Lille – LEM, QMI). – "Anomalous Price Impact and the Critical Nature of Liquidity in Financial Markets", J.-P. Bouchaud (CFM).
12 : 30 – 2 : 00 pm	Lunch break
Afternoon sessions	
2 : 00 – 3 : 00 pm	Keynote Session with P. Khuong-Huu, Managing Partner and Chief Investment Officer, Alphadyne and J.-P. Bouchaud, President and Head of Research, CFM.

	Introduction by T. Ducrot, Executive Director – Prime Brokerage, Morgan Stanley.
3 : 00 – 5 : 00 pm	QuantValley Asset Management Companies Introduction, moderated by T. Ducrot, Executive Director – Prime Brokerage, Morgan Stanley, with the participation of : – P. Abry (Vivienne Investissement, Head of Research) – F. Bonnin (John Locke Investments, CEO) – Y. Choueifaty (TOBAM, Head of Research) – A. Chrétien (Aequam Capital, Founder and CIO) – J. Schwimann (Seven Capital Management, CEO) – T. Tyl (Rivoli Fund Management, CEO)
5 : 00 – 7 : 00 pm	Cocktail

Day Two: June 26, 2013

8 : 45 am	Registration
9 : 00 – 10 : 30 am	Portfolio Allocation – "Portfolio Allocation with Budget and Risk Contribution Restrictions", S. Darolles (Université Paris – Daupohine, CREST, QMI), C. Gouriéroux, E. Jay. – "A Constant Volatility Framework for Managing Tail Risk", A. Hocquard, Sunny Ng, and N. Papageorgiou (HEC Montreal). – "Properties of the Most Diversified Portfolio", Y. Choueifaty, T. Froidure (TOBAM) and J. Reynier.
10 : 30 – 11 : 00 am	Coffee break
11 : 00 – 12 : 30 am	Volatility Modelling – "Volatility around the Clock: Bayesian Modeling and Forecasting of Intraday Volatility in the Financial Crisis", J. Johannes and J. Stroud (George Washington University). – "Large tick assets: implicit spread and optimal tick size", K. Dayri, M. Rosenbaum (UPMC, Quantate Consulting, QMI). – "The Reactive Volatility Model", S. Valeyre (John Locke), D. Grebenkov, S. Aboura, and Q. Liu.
12 : 30 – 2 : 00 pm	Lunch break
2 : 00 – 3 : 00 pm	Panel Session "UCITS Directive / AIFM Directive : Global Distribution ? Practical Considerations". Dechert LLP lawyers will present a program on the global distribution of UCITS / AIFs that will discuss the following topics : • Post Dodd-Frank challenges and operational issues with offering UCITS / AIFs in the United States • Targeting Latin American and other markets through the U.S. • Impact of the AIFM Directive on U.S. managers and services providers with the participation of Christopher Christian (Dechert partner, Boston

		office), Julien Bourgeois (Dechert partner, Washington office), Antoine Sarailler (Dechert partner, Paris office).
3 : 00 – 4 : 00 pm		Panel Session "Quant Funds and Investors Portfolios" organized by Morningstar. Speakers will discuss the following topics :
		• How to use Quant Funds in a diversified allocation?
		• Quant Funds and Managed Accounts Platforms
		• From Quant Funds to Quant Solutions
		with the participation of Eric Attias (CIO, UBP AI), Fabien Dersy (Director – Investment Management, Newalpha), Paul Justice (Director – Fund Research, Morningstar Inc.), Sebastian Lancetti (Head of US Equities Quantitative Research, UBS), Jérome Teiletche (Head of Systematic Investment Solutions, Lombard Odier).
4 : 00 pm		Closing Address by A. Pithon (Paris Europlace) and C. Sandler (NYSE EURONEXT)

4.4. Seminars & workshops

Over and above research production, the QMI aims to distribute quantitative management academic research throughout the scientific community but also towards quantitative management professionals (knowledge diffusion). To this end, QMI will organize seminars to present new, effective investment techniques being developed by academicians and practitioners.

4.4.1. Risk-Based Portfolio Construction, September 26, 2013, Geneva

The objective of this event is to promote exchange of ideas on risk-based portfolio construction, a topic of increasing importance both in the asset management industry and in the academic literature. The event will start with an academic session where speakers will review the different methodologies from different angles. A panel will follow where institutional investors and asset managers will discuss what are the pitfalls and opportunities of these approaches and how they apply (or could apply) them in practice.

This event is organized by Université de Genève, GFRI and QMI/QuantValley, with the support of Genève Place Financière and NYSE Euronext

180 registered persons

14.00-16.00: Research paper presentation

Chair: O. Scaillet (Université de Genève and Swiss Finance Institute)

 - S. Darolles (Université Paris-Dauphine & QMI): Robust Portfolio Allocation with Systematic Risk Constribution Restrictions [slides] [paper]
 - E. Jurczenko (ESCP Europe & QMI): Generalized Risk-Based Investing [slides] [paper]
 - T. Berrada (Université de Genève): It Does Pay to Diversity [slides]
 - T. Froidure (TOBAM): Properties of the Most Diversified Portfolio [slides]

16.00-16.30: coffee break

16.30-18.00: Panel discussion with the participation of:

 - Y. Choueifaty (CEO, TOBAM)
 - F. Frick (CEO, Unigestion)
 - G. Haenni (PhD, CIO, CERN Pension Fund)
 - S. Ledermann (Director, Head of Investments, Retraites Populaires)
 - C. Schaer (Head of Treasury & ALM, Fonds de compensation AVI/AI/APG)

- J. Teiletche (Head of Solutions Group, Lombard Odier IM)

4.4.2. Liquidity risk & tick size, December 16, 2013, NYSE-Euronext London.

The discussions about liquidity risk per se and/or the price impact of the tick size, show that the liquidity issue is at the heart of today's preoccupations. The liquidity issue will be taken up by the presentation of four recent academic papers on this theme and discussed during the panel session that will follow.

This event is organized by the QMI/Quantvalley Research Project and Imperial College London Business School, with the support of NYSE Euronext.

60 registered persons.

1.45pm – 2.00pm: Registration

2.00pm–4.00pm: Academic Presentations

Chair: Gaelle Le Fol (Université Paris-Dauphine & QMI)

- Robert Kosowski (Imperial College Business School): Geography, Liquidity and Fund Performance: New Evidence from UCITS Hedge Funds
- Serge Darolles (Université Paris-Dauphine & QMI): Liquidity Risk Estimation in Conditional Volatility Models
- Kevin Sheppard (University of Oxford): Measuring Market Speed
- Mathieu Rosenbaum (UPMC & QMI): Large Tick Assets: Implicit Spread and Optimal Tick Size

4.00pm – 4.30pm: Coffee Break

4.30pm – 6.00pm: Panel Session

Moderator: Laurent Fournier (Head of Business Statistics & Data Intelligence European Markets, NYSE Euronext)

- Jean-René Giraud (CEO, Koris International)
- Mathieu Rosenbaum (Professor, UPMC & QMI)
- Giovanni Beliossi (Managing Partner & CEO, FGS Capital)
- Kee-Meng Tan (Head of the Electronic Trading Group, KCG Europe Limited)

6.00pm – 7.00pm: Cocktail

4.6. Website

The goal of the website is to become a showcase for the QMI and to encourage exchange between research and professionals by becoming for example a public library of research articles and computer code relating to quantitative management themes. Official release September 1st, 2012. Address: QMinitiative.org.

The website is a way to manage the annual conference and workshops registrations. Moreover, it is continuously updated.

QMI Quantitative Management Initiative

Home   About QMI   Conferences   **Research**   Events & Resources

Contacts   Events Registrations

Research

Articles   Monographs   Current call for proposal   Recently funded   Completed projects

Research

This research initiative aims to be a means of exchange and reflexion where research themes emerge naturally, and become the starting point of research articles in the best international journals. The QMI must also be able to create a research community around themes of interest to management companies by calling for research projects nationally and internationally and by reinforcing the QMI member teams by recruiting research assistants and publishing doctoral contracts.

About QMI	Conferences	Research	Events & Resources
Présentation and goals	Conference participation	Articles	Current seminars
Exposure	Annual conference	Monographs	Past seminars
Objectives	Program	Current call for proposal	Call for training course
Research axes	Online registration	Recently funded	proposals
Researchers		Completed projects	Funded courses
Press Release			Library

Mentions Légales   Crédits   Contacts

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5. ANNEXES

5.1. Press Release

5.1.1. La WebTV

La WebTV : Regards d'Experts reçoit Serge Darolles, professeur à l'Université Paris-Dauphine et co-responsable de l'initiative de recherche Quantitative Management Initiative (QMI). Cette dernière a pour vocation de permettre aux sociétés de gestion de rencontrer des experts, et de façon ponctuelle, permettre à des chercheurs externes de travailler sur des sujets financiers avec ces sociétés de gestion.

Serge Darolles présente les thèmes de son groupe qui portent essentiellement sur la gestion du risque de liquidité.

5.1.2. Les cahiers Louis Bachelier

Contagion entre marchés: l'exemple des marchés émergents
S. Darolles, Université Paris-Dauphine, Member of the QMI
J. Dudek, CREST and Université Paris - Dauphine, Member of the QMI
G. Le Fol, Université Paris-Dauphine and CREST, Member of the QMI

Résumé: Les marchés financiers sont de plus en plus interconnectés, mais cette interdépendance, incontournable, doit être distinguée des phénomènes de contagion beaucoup plus violents qui surgissent en période de crise. Analysant le cas du marché de la dette souveraine des pays émergents, les auteurs distinguent les contagions dues à des causes structurelles, et celles provenant des flux entre marchés, liées à des crises de liquidité. Ils montrent que la crise de 2007-2008 sur les marchés de la dette des pays émergents correspond à ce deuxième cas. Et ils développent une approche permettant aux asset managers, confrontés au risque de liquidité, d'anticiper ces crises