

QUANTVALLEY /FDR RESEARCH INITIATIVE



2012 - 2013

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 first year of existence.

Draft January 2013

Table of Contents

| | |
|---|-----------|
| 1. INTRODUCTION | 5 |
| 1.1. The objectives of the QMI | 6 |
| 1.2. Research axes of the QMI..... | 6 |
| 1.3. The QMI's organization | 8 |
| The steering committee..... | 8 |
| The Advisory Board..... | 8 |
| The secretariat..... | 8 |
| The QMI's researchers..... | 9 |
| The QMI's associate researchers..... | 11 |
| 2. PRE- LAUNCH AND LAUNCH EXPOSURE..... | 12 |
| 2.1. Conference Participation..... | 12 |
| 2.1.1. 1ST ANNIVERSARY OF THE QUANTVALLEY ASSOCIATION | 12 |
| 2.1.2. CAMSAP CONFERENCE 2011, PUERTO RICO | 12 |
| 2.2. OFFICIAL LAUNCH of the QMI..... | 12 |
| 3. RESEARCH ACTIVITIES | 14 |
| 3.1. Research Publications | 14 |
| 3.1.1. Proceedings of the CAMSAP 2011 CONFERENCE, PUERTO RICO, December 2011..... | 14 |
| 3.1.2. JASSA The Finsia Journal of Applied Finance, 2012, Issue 1 | 14 |
| 3.1.3. Risques n° 88, January 2012 | 14 |
| 3.2. QUANTVALLEY/Wiley Monographs..... | 15 |
| 3.3. Call for projects | 15 |
| 3.4. Strengthening of the research teams | 18 |
| 3.4.1. Recruitment of research assistants / research engineers | 18 |
| 3.4.2. PhD and postdoc funding..... | 18 |
| 4. RESEARCH EXPOSURE AND DIFFUSION | 18 |
| 4.1. Call for Training course projects..... | 18 |
| 4.2. Conference and seminar participation | 19 |
| 4.2.1. Institutional Management FORUM, PARIS, 13-14 March 2012..... | 19 |
| 4.2.2. MATLAB Seminar, PARIS, 20 March 2012 | 19 |
| 4.2.3. Asymptotics in Finance..... | 20 |
| 4.2.4. SMF-VMS joint congres | 20 |
| 4.2.5. Econometric Society European meeting (EEA-ESEM)..... | 20 |
| 4.2.6. 4th French Econometrics Conference..... | 20 |
| 4.2.7. 6th CSDA International Conference (CFE 2012)..... | 20 |
| 4.2.8. Seminar participation | 21 |
| 4.3. Annual Conference | 21 |
| Day One: November 1, 2012 | 23 |
| Day Two: November 2, 2012 | 24 |
| 4.4. Seminars | 25 |
| 4.5. White papers | 25 |
| 4.6. Website | 25 |

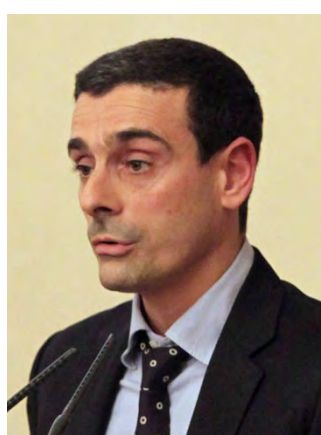
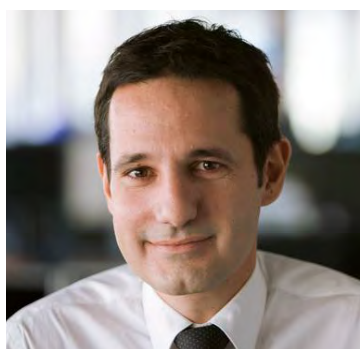
| | |
|------------------------------|-----------|
| 5. ANNEXES | 28 |
| 5.1. Research Papers | 28 |
| 5.1.1. Working papers..... | 28 |
| 5.1.2. Published Papers..... | 29 |
| 5.2. Press Release..... | 29 |

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 preparing the first volume of the QuantValley collection, published with Wiley (see page 15). A project by Emmanuelle Jay is also receiving funding of 5,000 euros from the QMI (page 17). And a « signal treatment and quantitative management » session has been organised by the QMI for the Computational Financial Econometrics (CFE) conference in Oviedo on the 1st, 2nd and 3rd of December (page 20).

Listed market liquidity

Measure of the market liquidity of different assets.

Research is currently being conducted by Gaëlle Le Fol on the liquidity of the FX market. The dataset comprises all centralized transactions in the FX market occurring between January 1, 2000 and December 31, 2009 on the Electronic Broking Services (EBS) platform. Serge Darolles and Gaëlle Le Fol are working on market liquidity of listed options. The data was provided for free by NYSE. A « liquidity » session will also be organised by the QMI in the context of the Computational Financial Econometrics (CFE) in Oviedo on the 1st, 2nd and 3rd of December (page 20). The goal is then to present this research during the Paris Hedge Funds conference in January 2013. Eventually, the goal will be to study the link between the liquidity of the underlying and the options on this underlying. We are looking at how information filtered from option markets can help predict future price behaviour. Fabrice Riva, a chair member, is for his part working on ETF liquidity. He will be presenting a research paper on behalf of the QMI at the Oviedo conference.

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 14). 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. Dale Rosenthal has also received funding of 5,000 euros by the QMI for his work on performance measures for high frequency trading strategies (page 17).

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 will be presented at the Econometric Society European Meeting in August (page 20). Does one observe contagion mechanisms, or simply the influence of market factors? Serge Darolles, 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. This article will also be presented at the Econometric Society European Meeting in Malaga in August (page 20).

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 Jérôme Teiletche are working on the second volume of the QuantValley collection, published with Wiley, the theme of which is also risk parity (page 15). Finally, Emmanuel Jurczenko will propose a course module entitled "Risk-based allocation Portfolios" that will deal amongst others with the problem of risk parity (page 19).

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.

Machine learning & Classification techniques with application to trading systems

A research team from the University of Rotterdam headed by Professor Micheal McAleer has received 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 16).

Impact of quantitative trading on the economy

A senior research team from the University of Cergy has received funding of 10,000 euros for a research project working on a model of mortgage default risk (page 17).

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

General Secretary

Fabrice Riva, Professor, IAE de Lille

Researchers from l'ENSAE and Université Paris-Dauphine

Serge Darolles, Professor, Université Paris -Dauphine and CREST

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

Marc Hoffmann, Professor, Université Paris -Dauphine

Elyès Jouini, Professor, Université Paris-Dauphine

Other Members

Emmanuel Bacry, CNRS and Ecole Polytechnique

Patrick Duvaut, Ecole nationale supérieure de l'électronique et de ses applications, Cergy

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

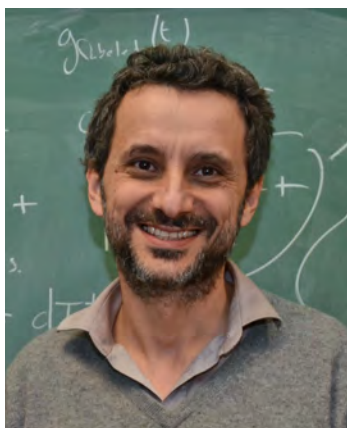
Qualified Person: Michel Crouhy (Natixis)

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

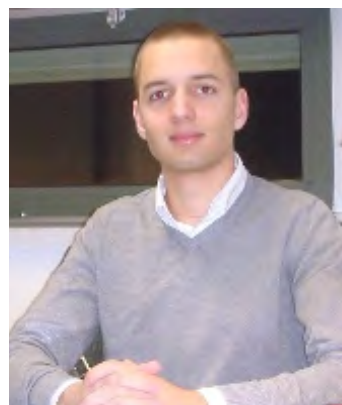
The secretariat

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 and CREST



C. Gouriéroux, CREST and Toronto University



M. Hoffmann, Université Paris - Dauphine and CREST



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

The QMI's associate researchers



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



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



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

2. PRE- LAUNCH AND LAUNCH EXPOSURE

Even before its official launch, as early as 2011, QMI members worked on increasing the initiative's exposure by promoting the QMI and its research on several occasions.

2.1. Conference Participation

- Date 2011
- Themes: Application of quantitative methods to management

2.1.1. 1ST ANNIVERSARY OF THE QUANTVALLEY ASSOCIATION



A collaborative initiative to advance shared knowledge, PARIS, 17 November 2011

G. Le Fol, Université Paris-Dauphine, Scientific director of the QMI

P. Lacourarie, Head of Marketing and Sales for France, UBS Prime Services

M. Souffir, Directeur Général, GFI Paris

2.1.2. CAMSAP CONFERENCE 2011, PUERTO RICO

Regularization of the Kalman Filter for Exogenous Outlier Removal: Application to Hedge Funds, 13-17 December 2011

E. Jay, Chairman, QamLab, Member of the QMI

2.2. OFFICIAL LAUNCH of the QMI

The official launch of the research initiative was marked by the participation in the opening ceremony of the Parisian financial market: Ring the Bell Ceremony, PARIS, 1st February 2012.



From left to right: Philippe Tastevin (Director Corporate Strategy, NYSE-EURONEXT), Fabrice Riva (IAE de Lille, QMI), Jean-Philippe Bouchaud (President of the CFM, Member of QUANTVALLEY), Antoine Frachot (Director General of the Groupe des Ecoles Nationales d'Economie et de Statistique), Serge Darolles (Vice-president of QUANTVALLEY, QMI), Gaëlle Le Fol (Université Paris-Dauphine, QMI), Marc Souffir (GFI Director France), Emmanuel Jurcenko (ESCP Paris, QMI), Emmanuelle Jay (QamLab, QMI), Philippe Tibi (Président d'UBS France), Mathieu Rosenbaum (Ecole Polytechnique, QMI), Patrick Duvaut (ENSEA-ETIS, QMI), Laurent Batsch (President of the Université Paris - Dauphine), Arnaud de BRESSON, (General delegate Paris EUROPLACE).

Philippe Tastevin, Director Corporate Strategy, NYSE-EURONEXT, commended this initiative that aims to develop management on the Parisian financial market and expressed NYSE-EURONEXT's full support.



Gaëlle Le Fol, Professor at the Université Paris - Dauphine and Scientific director of the QMI reiterated the different stages that led to the creation of this initiative thanks to the drive, perseverance and trust of its partners, researchers and funding bodies. As she emphasised, the presence of all of them at the launch is the first sign of the success of this project.

She reasserted that the ambition of this initiative was to produce research of a world-class standard, and to diffuse it amongst the scientific community in renowned international journals and conferences but also within quantitative management companies.

This launch happened in the presence of all the members of the research initiative, the sponsors, the representatives of partner institutions and the members of QUANTVALLEY. It was the opportunity for a first exchange between management companies, researchers and institutional investors interested in the development of management in the Parisian financial market. The divided aspect of management does not naturally encourage these encounters. The valorisation of research as well as the regular presentation of results initiated by the QMI will encourage them.

NYSE Euronext

PRODUCT LOOKUP

ADVANCED SEARCH

LISTINGS DIRECTORY

Home

Listings

Equities

Bonds

Futures/Options

Market information

Regulation

Individual investor

Euronext.com/ Home/ Bell ceremonies/ Next and recent

EN FR NL PT

Home

NYSE Euronext news

Bell ceremonies

Overview

Next and recent

Archives

Information:

For Market Professionals

For Listed Companies

Investor relations

>> NYSE Euronext

>> www.nyse.com


>> 简体中文

Next and recent

Back

Launch of the Quantitative Management Initiative (QMI)

(01/02/2012)



00:47

00:55

The «Quantitative Management Initiative (QMI)» aims at creating synergies between quantitative management firms, academia and market authorities in order to achieve excellence in research.

It is difficult for small management firms to identify academic partners and to attract high profiles graduates. Although many of those students are trained in France, but they often prefer to move to London or New York. 8 firms located in Paris have created the QuantValley association in 2010. This association propose a sustainable and responsible ecosystem to promote quantitative finance, to favor research and its applications in terms of risk management.

QuantValley, associated with GFI and UBS, has launched the « Quantitative Management Initiative (QMI) », managed by Gaëlle Le Fol Professor at Université Paris-Dauphine and hosted by the Fondation du Risque headed by André Lévy Lang. To optimize the cooperation between professionals and researchers, the initiative will organized workshops and conferences with the support of it academic partners, Université Paris-Dauphine and ENSAE - French National School of Statistics and Administration.

Page 13

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: 2012
- Themes: Quantitative Management

3.1.1. Proceedings of the CAMSAP 2011 CONFERENCE, PUERTO RICO, December 2011

Regularization of the Kalman Filter for Exogenous Outlier Removal: Application to Hedge Funds

E. Jay, Chairman, QamLab, Member of the QMI

P. Duvaut, ENSEA-ETIS, Member of the QMI

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

C. Gouriéroux, CREST et Toronto University, Member of the QMI

3.1.2. JASSA The Finsia Journal of Applied Finance, 2012, Issue 1



Reducing the risk of VWAP order execution?

J. Bialkowski, Université de Canterbury

S. Darolles, Université Paris-Dauphine and CREST, QMI

G. Le Fol, Université Paris-Dauphine, Scientific Director of the QMI

Abstract: This paper proposes a new dynamic approach to modelling intra-day trading volume based on factor models. It assumes that intra-day volume can be decomposed into two parts each predicted using separate time-series models. By enabling more accurate prediction of intra-day volume, this methodology allows for a significant reduction in the cost of executing Volume Weighted Average Price orders.

3.1.3. Risques n° 88, January 2012



Development of Quantitative Management

G. Le Fol, Université Paris-Dauphine, Scientific Director of the QMI

Abstract: In this article, we present the most recent research initiative of the Fondation du Risque, entitled « Development of Quantitative Management ». It was born from the need to collaborate with academia expressed by several quantitative management companies from the Parisian financial market, brought together within the QUANTVALLEY association. These small entrepreneurial companies need to increase their exposure, improve their access to academic research and attract new high-profile collaborators. The idea is therefore to participate in the development of quantitative research and the creation of a new model of collaboration between academic research centres and management companies, think tanks or idea laboratories. The creation of the research initiative « Development of Quantitative

Management », centred around two internationally-renowned scientific institution (the École nationale de la statistique et de l'administration économique and the Université Paris-Dauphine), constitutes an appropriate response to this need for development and collaboration.

3.2. QUANTVALLEY/Wiley Monographs

- Date: 2013
- 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. Statistical Signal Processing and Factor Models in Finance

S. Darolles, Université Paris-Dauphine and CREST, QMI

P. Duvaut, ENSEA-ETIS, QMI

E. Jay, Chairman, QamLab, QMI

3.2.2. Risk Parity

E. Jurczenko, ESCP Europe, QMI

J. Teiletche, Lombard Odier

3.3. Call for projects

- Date: March 2012
- Themes: Quantitative Management

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
- Crisis and systemic risk
- 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
- etc.

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 I'ILB, la Fondation du Risque and CREST networks

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

33 projets were received from 47 prestigious international institutions such as : Cass Business School, Cornell University, Ecole Polytechnique, EDHEC, Erasmus University Rotterdam, ESCP Europe, HEC, Ross School of Business, Stanford University, Swiss Finance Institute, University Ca' Foscari of Venice, University of California at Berkeley and Haas School of Business, University of Lausanne, University of Padova, and Washington State University.

Out of these 33 projects, 24 were complete and related to the QMI themes, and about 60% were major projects.

The 24 projects that were considered were:

1. Machine Learning, Sentiment indices and Stock Market Prices

The four selected 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).

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.

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.

3.4. Strengthening of the research teams

- Date: TBC
- Difficulties: Localisation of assistants and PhD students (CREST or Dauphine are possibilities if there is collaboration with a research from CREST or Dauphine). In discussions over a location with the ILB and the Fondation du risque. Another difficulty is that the length of a doctoral programme is superior to the duration of the QMI. The only PhD funding that can therefore be considered are thesis completion bursaries (1 year).

3.4.1. Recruitment of research assistants / research engineers

The research topics promoted by the QMI being very close to their applications, it is important to specifically formulate their applications in research articles. In order to do so, the QMI must recruit research engineers who are capable of constructing direct illustrations of the concrete applications of the QMI's research.

3.4.2. PhD and postdoc funding

A significant component of the research funding will be directed towards PhD or postdoc funding on themes that relate to quantitative management. The development of quantitative management will generate recruitment needs that the RI must anticipate. Placing alumni of the QMI in management companies is indeed the best way to ensure research diffusion through an informal network of QMI alumni.

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

- Date: May 2012
- Themes: Quantitative Management

The goal is to propose specialised courses.

Quantitative Management institutions can encounter difficulties in accessing up-to-date research and articles. One of the goals of the chair is to develop a tutorial program susceptible of encouraging management companies to regularly use and valorise research results.

The call for projects has been launched on the ILB, Fondation du risque and CREST networks.

12 projects have been received from various institutions such as Bologna University, Cornell University, Ecole Centrale Paris, HEC Lausanne, Karlsruhe Institute of Technology, Université Paris - Dauphine, University of Illinois at Chicago, University of Geneva, 10 of which were complete and related to the RI's themes.

The training projects which were considered were the following:

1. The econometrics of high frequency data
2. Commodities as an asset class
3. Hedging through a limit order book
4. Higher moments and portfolio allocation

5. Wavelet based statistical signal processing for financial time series
6. Risk-based Allocation portfolios
7. Statistical signal processing with financial applications
8. Financial market networks
9. Market microstructure and electronic trading
10. The dynamics of arbitrage conditional on discrete signals

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/Views.

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, 13-14 March 2012

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.

- *The applications of Signal Treatment to Quantitative Management*

E. Jay, Chairman, QamLab, Member of the QMI

- *Presentation of the Major Research Themes of the QUANTVALLEY/FdR Research Initiative, Development of Quantitative Research*

F. Riva, Université Paris-Dauphine, Member of the QMI

4.2.2. MATLAB Seminar, PARIS, 20 March 2012

- *The applications of Signal Treatment to Quantitative Management*

E. Jay, Chairman, QamLab, Member of the QMI

4.2.3. Asymptotics in Finance

Chicago, May 3-4 2012

- *Asymptotically optimal discretization of hedging strategies with jumps*

M. Rosenbaum, UMPC, Ecole Polytechnique and Member of the QMI

4.2.4. SMF-VMS joint congress

University of Hue (Vietnam) August 20-24, 2012

- *Asymptotically optimal discretization of hedging strategies with jumps*

M. Rosenbaum, UMPC, Ecole Polytechnique and Member of the QMI

4.2.5. Econometric Society European meeting (EEA-ESEM)

Málaga (Andalucia, Spain) 27-31, August 2012.

- *Survival of Hedge Funds: Frailty vs Contagion*

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

- *Liquidity contagion a look at emerging market*

J. Dudek, CREST and Université Paris - Dauphine, Member of the QMI

- *Tracking illiquidities in intradaily and daily characteristics*

G. Méro, Université Cergy - Pontoise, Member of the QMI

4.2.6. 4th French Econometrics Conference

Rennes, November 22-23, 2012.

- *Large tick assets: implicit spread and optimal tick size*

M. Rosenbaum, UMPC, Ecole Polytechnique and Member of the QMI

4.2.7. 6th CSDA International Conference (CFE 2012)

Computational and Financial Econometrics, Oviedo, Espagne, December 2012

- *Statistical signal processing applied to asset management, session CS17.*

S. Darolles, Chairman and organizer, Université Paris-Dauphine et CREST, Member of the QMI

E. Jay, Chairman, QamLab, Member of the QMI

- *An agent-based model for microstructure noise and trade impacts*

E. Bacry, CNRS, Ecole Polytechnique and Member of the QMI

- *A regularized version of the Kalman filter for risk management and portfolio hedging*

E. Jay, QamLab and Member of the QMI

- *Financial markets liquidity, session CS32.*

G. Le Fol, Chairman and organizer, Université Paris - Dauphine, Scientific Director of the QMI

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

- *MLiq a Meta Liquidity Measure*

G. Le Fol, Université Paris - Dauphine, Scientific Director of the QMI

- *Liquidity in ETFs*

F. Riva, IAE de Lille - LEM, Member of the QMI

4.2.8. Seminar participation

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

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

- Séminaire de Probabilités et Statistiques, Université du Mans, January 5, 2012.
- Mathematical Finance seminar, Osaka University, February 21, 2012.
- Mathematical Finance seminar, Imperial College London, March 7, 2012.
- Séminaire de Probabilités-statistiques de l'université Paris 13, May 9, 2012.
- Séminaire INRIA, équipe TOSCA, Sophia Antipolis, May 23, 2012.
- Opening meeting of the DFG Research Training Group, Berlin, November 17, 2012.

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

- Séminaire Chaire "Risques financiers", X-Ponts-UPMC-Société Générale, May 30, 2012.
- Séminaire Bachelier, Institut Henri Poincaré, October 5, 2012

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

- Séminaire du CRM – IAE de Toulouse, February 2012
- EDHEC Risk Institutional Days, London, March 2012

"Survival of Hedge Funds: Frailty vs Contagion", S. Darolles, P. Gagliardini, and C. Gouriéroux

- Econometric Seminar, University of Toronto, November 9, 2012
- Séminaire de Finance, ESSEC, Paris, November 19, 2012
- Econometric Seminar, Pennstate University, December 4, 2012

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)

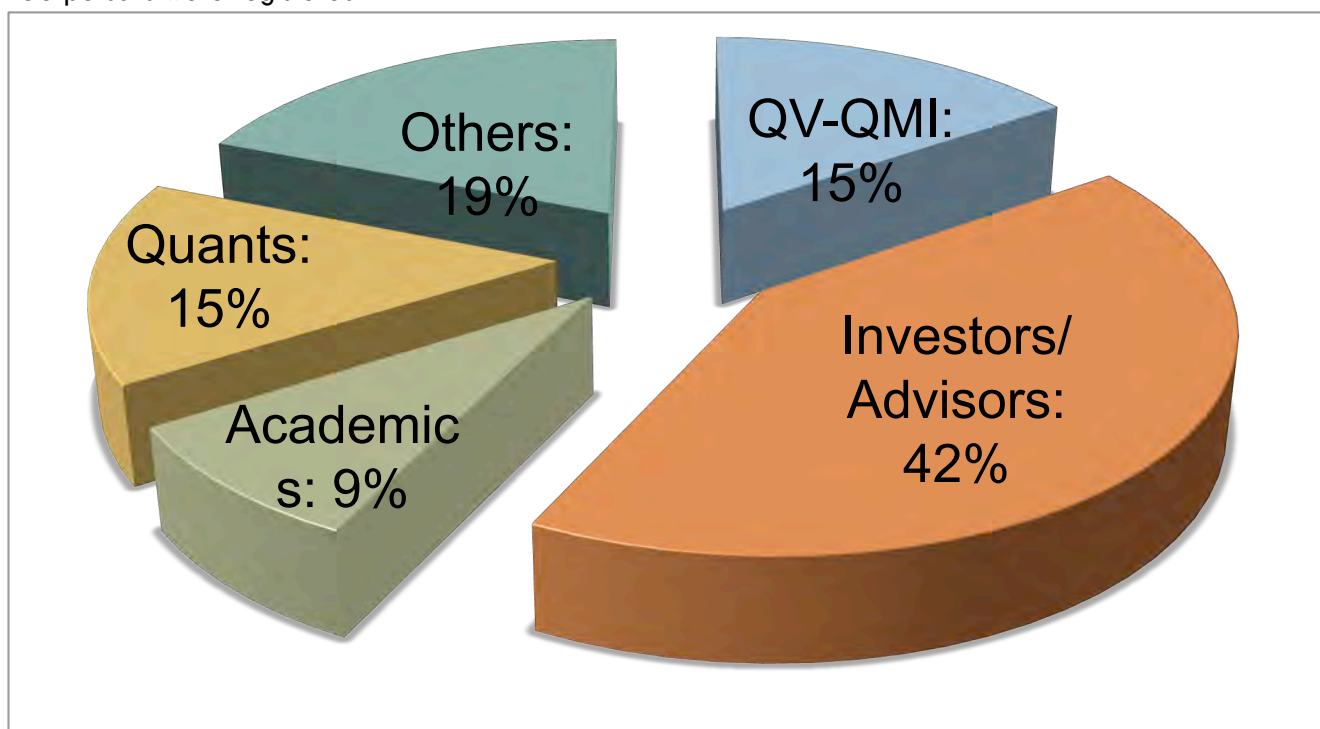
- Themes: Quantitative Management

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.

We should re-scheduled the conference in April or May 2013.

Program

Day One: November 1, 2012

| | |
|----------------------|---|
| 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 – " <i>Microstructure noise, Market impact and Point processes</i> ", E. Bacry (CNRS, Ecole Polytechnique, Quantate Consulting, QMI) – " <i>A Machine-Learning View of Quantitative Finance</i> ", S. Cléménçon (Telecom ParisTech) |
| 10 : 30 – 11 : 00 am | Coffee break |
| 11 : 00 – 12 : 30 am | Liquidity Session – " <i>Liquidity Risk and Security Prices</i> ", R. Sadka (Boston College) – " <i>ETF liquidity: What really matters?</i> ", L. Deville and F. Riva (IAE de Lille – LEM, QMI) – " <i>Anomalous Price Impact and the Critical Nature of Liquidity in Financial Markets</i> ", J.-P. Bouchaud (CFM) |
| 12 : 30 – 2 : 00 pm | Lunch break |
| Afternoon sessions | Organized by Kenmar Olympia at The Mercantile Exchange , 1 North End Avenue, New York |
| 2 : 00 – 3 : 00 pm | Keynote Address, by R. Schaeffer , Executive Chairman, Liquid Holdings Group, LLC |
| 3 : 00 – 5 : 00 pm | QuantValley Asset Management Companies Introduction, moderated by S. Heuer (President, CEO & Co-CIO Olympia Funds, Kenmar Olympia), with the participation of: P. Abry (Vivienne Investissement, Director of Research) F. Bonnin (John Locke Investments, CEO) J.-P. Bouchaud (CFM, President and Head of Research) A. Chrétien (Aequam Capital, Chairman and CIO) T. Froidure (TOBAM, Head of Research) E. Marcombes (Cogitam, CEO) J. Schwimann (Seven Capital Management, CEO) T. Tyl (Rivoli Fund Management, CEO) |

5 : 00 – 7 : 00 pm French Wine Tasting, introduced by **Gery Sampere**, co-founder and former Partner of Bluecrest and Blue Mountain

Day Two: November 2, 2012

8 : 45 am Registration

9 : 00 – 10 : 30 am Portfolio Allocation

- "[*Portfolio Allocation with Budget and Risk Contribution Restrictions*](#)", S. Darolles, **C. Gouriéroux** (University of Toronto, CREST, QMI), E. Jay
- "*Betting Against Beta*", **A. Frazzini** (New York University, AQR)
- "*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

- "*Identifying Contagion*", M. Dungey and **E. Renault** (Brown 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, introduced by **S. Stickler** (Managing Director, UBS)

2 : 00 – 3 : 00 pm Panel Session "UCITS: Global Distribution – Practical Considerations".

Dechert LLP lawyers will present a program on the global distribution of UCITS that will discuss the following topics:

- Post Dodd–Frank challenges with offering UCITS in the United States
- Operational issues
- Targeting Latin American and other markets through the U.S.

with the participation of C. Christian (Dechert partner, Boston office), J. Bourgeois (Dechert partner, Washington office), A. Sarailier (Dechert partner, Paris office), K. Van Name (Head of Distribution, QS Investors)

3 : 00 – 4 : 00 pm Panel Session "Quant Funds and Investors Portfolios"

How to use Quant Funds in a diversified allocation?

Quant Funds and Managed Accounts Platforms

From Quant Funds to Quant Solutions

Moderated by **J. Rekenhaller** (Vice President – Research, Morningstar Inc.), with the participation of Eric Attias (Chief Investment Officer, UBP Asset Management), Ken Shewer (Co–Executive Chairman & Global Co–CIO , Kenmar Olympia), Jerome Teiletche

4 : 00 pm Closing Address by **A. de Bresson** (Paris Europlace) and **E. Jouini** (Université Paris–Dauphine, QMI)

4.4. Seminars

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.

4.5. White papers

QMI will launch in 2013 its QMI White paper serie. The QMI White paper is a quarterly publication. They are designed to explore topics of current interest to quantitative fund managers and investors.

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

Research Community

The QMI must also be able to create a research community around themes of interest to management companies.

ABOUT QMI

Hosted within the *Fondation du Risque* and with the support of the *Institut Louis Bachelier*, 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*.

[More information](#)

1 2 3

QMI News & Events

Institutional Management FORUM
Paris du 13/03/2012 au 14/03/2012

MATLAB Seminar
Paris du 20/03/2012 au 20/03/2012

Econometric Society European meeting (EEA-ESEM)
Málaga (Andalucía, Spain) du 27/08/2012 au 31/08/2012

6th CSDA International Conference on CFE 2012, Computational and Financial Econometrics
Oviedo, Espagne du 01/12/2012 au 02/12/2012

RESEARCH ACTIVITY

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.

[Read more](#)

RESOURCES

The QMI aims to distribute quantitative management academic research throughout the scientific community but also towards quantitative management professionals. To this end, training (research applications) will be developed and the website will propose research articles and webinars that put that research into practice.

[Read more](#)

QMI

Annual Conference

INFOS & RESERVATIONS



About QMI

[Présentation and goals](#)
[Exposures](#)
[Objectives](#)
[Research axes](#)
[Researchers](#)
[Press Release](#)

Conferences

[Conference participation](#)
[Annual conference](#)
[Program](#)
[Online registration](#)

Research

[Articles](#)
[Monographs](#)
[Current call for proposal](#)
[Recently funded](#)
[Completed projects](#)

Events & Resources

[Current seminars](#)
[Past seminars](#)
[Call for training course proposals](#)
[Funded courses](#)
[Library](#)

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

Présentation and goals
Exposure
Objectives
Research axis
Researchers
Press Release

Conferences

Conference participation
Annual conference
Program
Online registration

Research

Articles
Monographs
Current call for proposal
Recently funded
Completed projects

Events & Resources

Current seminars
Past seminars
Call for training course
proposals
Funded courses
Library

5. ANNEXES

5.1. Research Papers

5.1.1. Working papers

Allen, D.E., McAleer, M. and Singh A.K., Machine Learning, Sentiment indices and Stock Market Prices, Mimeo.

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

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. Under Revision in Finance.

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 Gouriéroux, C., Survival of Hedge Funds: Frailty vs Contagion. Working paper SSRN. Submitted to Review of Financial Studies.

Darolles, S., Gouriéroux, 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., Le Fol, G., Option Market Liquidity, Mimeo.

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.

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

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

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

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.

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.

5.1.2. Published Papers

Bialkowski, J., Darolles, S. and le Fol, G., Reducing the risk of VWP orders execution A new approach to modeling intra-day volume. JASSA, No. 1, 2012: 12-18.

5.2. Press Release



NextFinance
One step further

Novembre 2011

Arnaud Chrétien and Serge Darolles : « The objective of Quantitative Finance is to increase the value of French Quantitative Finance »

Quantitative Finance is a discipline that combines mathematics, statistics, and computer science to analyze financial markets and develop trading strategies. It is a field that has grown rapidly in recent years, and it is now one of the most important areas of research in finance.

Arnaud Chrétien and Serge Darolles are two of the leading experts in this field. They are both professors at the University of Paris, and they have both published numerous papers on quantitative finance. They are also co-authors of the book "Quantitative Finance: A Practical Approach" (John Wiley & Sons, 2010).

In this article, they discuss the current state of quantitative finance in France, and they offer their views on the future of the field. They argue that the main challenge facing quantitative finance in France is the lack of a strong academic tradition. They believe that this is due to the fact that the field is relatively new, and it has not yet been fully integrated into the French academic system.

They also discuss the importance of research in quantitative finance, and they argue that it is essential for the development of the field. They believe that research should be focused on developing new trading strategies, and on improving the accuracy of financial models.

Finally, they offer their views on the future of quantitative finance in France. They believe that the field will continue to grow, and that it will become an increasingly important part of the French financial system. They also believe that it is essential for the French government to support research in quantitative finance, and to encourage the development of a strong academic tradition in the field.

Arnaud Chrétien and Serge Darolles

whose knowledge is precisely what you are buying?

Research and innovation must be at the centre of all management. Convancing new investors must go through the valorization of local natural resources. It is from this perspective, that management companies, with the help of two major partners GFI and UBS decided to promote exchange between quantitative asset management and the academic arena via the creation of the research initiative «Développement de la Gestion Quantitative» (Development of Quantitative Management).

“ The second impediment to development of Parisian quantitative management after size, is the limited access that management companies have to academic research. However, this research exists and, furthermore, is highly developed locally. ”

Arnaud Chrétien and Serge Darolles

This research initiative has the intention of being a place to meet, a place of reflection and exchange where research themes emerge naturally and become motivation for research papers published in the best reviews. This research community will participate directly in the visibility of management companies, in the growth of assets and therefore of profits, and as an offshoot of this, in the budget increase, the size of research teams, and in developing the core business of each management company.

It is this virtuous circle that will allow ideas and achievements within the collaborative project to be protected. The savoir-faire of the individual will always be the number one selling point of each of our partners and will be enhanced by membership of this quantitative management ecosystem

Link to the article, clic [here](#).

Actualités

[<< Précédent](#) |
 [Suivant >>](#)

Lancement de l'Initiative de Recherche "Développement de la Gestion Quantitative: Ring the Bell Nyse Euronext (1er Février 2012)

09/01/2012

L'Initiative de Recherche « Développement de la gestion quantitative » est née d'un besoin de collaboration avec la recherche académique exprimé par plusieurs sociétés de gestion quantitatives de la place financière parisienne regroupées au sein de l'association QuantValley.

L'Initiative de Recherche « Développement de la gestion quantitative » est née d'un besoin de collaboration avec la recherche académique exprimé par plusieurs sociétés de gestion quantitatives de la place financière parisienne regroupées au sein de l'association QuantValley. Ces sociétés entrepreneuriales, de taille réduite, doivent accroître leur visibilité, développer leur accès à la recherche académique et attirer de nouveaux collaborateurs ayant de bons profils. L'idée est alors de participer au développement d'une recherche quantitative et à la création d'un nouveau modèle de collaboration entre centres de recherche académiques et sociétés de gestion, les fameux think tank ou laboratoires d'idées.

La création de l'initiative de recherche « Développement de la gestion quantitative », centrée sur deux institutions scientifiques de niveau international (l'École nationale de la statistique et de l'administration économique et l'Université Paris-Dauphine) constitue une réponse appropriée à ce besoin de développement et de collaboration.

Link to the article, clic [here](#).

