

Chair's opening and welcome

12:00 - 12:05

QuantMinds In Focus: AI & ML

Boosting Style with Sentiment in Fixed Income and FX Markets

12:05 - 12:50

QuantMinds In Focus: AI & ML

Can country-specific macro news sentiment boost the performance of traditional style factors in the cross-section of developed markets sovereign bonds and currencies?

This session will address this question using real-time sentiment analytics from RavenPack, examining the findings that sentiment-based tilts of benchmark portfolios significantly boost risk-adjusted returns across carry, value, momentum, and defensive styles.

Participants

Speaker: Inna Grinis - Senior Data Scientist, RavenPack

Learning Exotic Derivatives without calibration

13:00 - 13:45

QuantMinds In Focus: AI & ML

- Where we are
- From model parameters to market data
- Configuring and training the ANNs
- Results and stability analysis
- Future work

Machine Learning has worked his way into pricing several years ago. In this context we say pricing meaning 'pricing according to a model'. After all, learning how to price is just learning a function depending on a very limited number of parameters. Neural networks have proven time over time to be quite effective in learning functions so it was a natural venue to apply them in this context. As a first step we test simple models, i.e. Black-Scholes, and complex payoffs like digital multi-asset options. Then we test more complex models.

A pricing model is defined by few parameters, which are calibrated to market data and then used to price assets not quoted in the market. The calibration procedure is quite delicate and time consuming, since it must be repeated frequently to catch every single glitch of the market. The idea behind this work is to use artificial neural network not only to price derivatives but also to replace the calibration procedure. In a 'standard' ANN approach we would train the network using model parameters. Instead, we try to replace model parameters with market data, such that, once trained, the network can provide reliable results without need of calibration. We test these concepts on toy models with available (semi) analytical solutions, i.e. the stochastic volatility Heston model and the One factor Hull & White model.

Participants

Speaker: Marco Bianchetti - Head of Internal Model Market Risk at Intesa Sanpaolo, Adjunct professor of Interest Rate Models, University of Bologna

Speaker: Pietro Rossi - Senior Analyst at Prometeia, and Adjunct professor, Dept. of Statistical Sciences "Paolo Fortunati", University of Bologna

Natural Language Processing ESG insights for quantitative investment

15:00 - 15:45

QuantMinds In Focus: AI & ML

This session will be dedicated to showing how Natural Language Processing can help construct ESG datasets based on web data to generate time series for quantitative use cases:

- Extracting relevant information from data sources - tagging companies and ESG risks using Natural Language Processing
- Assessing the relevance of time series and comparing them with ESG controversies
- Analysis of extreme use cases: Wirecard
- Building volatility forecasts and quantitative strategies using machine learning, combining market data with ESG alternative data

Participants

Speaker: Sylvain Forte - CEO & Founder, Sesamm

Pricing Bermudan Swaptions with Supervised Learning Algorithms

16:00 - 16:45

QuantMinds In Focus: AI & ML

- Machine learning and Bermudan swaptions pricing
- Generating arbitrage free market data set
- Training ML algorithms and comparing the results
- Extracting information from prices via Supervised Learning techniques

Participants

Speaker: Riccardo Aiolfi - Data Scientist, Data Reply

Speaker: Nicola Moreni - Head of Interest Rates & Credit Models, Intesa Sanpaolo

Benchmark datasets in finance

17:00 - 17:45

QuantMinds In Focus: AI & ML

Participants

Moderator: Ioana Boier - Head of Quantitative Portfolio Solutions, Alphadyne Asset Management

Panellist: Samuel Cohen - Associate Professor, Theme lead for ML in Finance Alan Turing Institute, University of Oxford

Panellist: Blanka Horvath - Lecturer in Financial Mathematics, King's College London

Panellist: Mathieu Rosenbaum - Resident Professor, Ecole Polytechnique

Panellist: Harvey Stein - Head of the Quantitative Risk Analytics Group, Bloomberg

SESSIONS

PLEASE NOTE THIS IS THE 2021 AGENDA - 24/05/2021

QuantMinds In Focus

23-27 May, 2022

Online virtual conference

BST (British Summer Time, GMT+1)

New developments in Deep Pricing

18:00 - 18:45

QuantMinds In Focus: AI & ML

Participants

Speaker: Youssef Elouerkhaoui - MD, Global Head of Markets Quantitative Analysis, Citigroup

Valuing Exotic Options and Estimating Model Risk

19:00 - 19:45

QuantMinds In Focus: AI & ML

Participants

Speaker: John Hull - Maple Financial Group Chair, Derivs. & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Speaker: Zissis Poulos - Postdoctoral Fellow, Joseph L. Rotman School of Management, University of Toronto

SCHEDULE

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| 13:00 | 13:00 - Learning Exotic Derivatives without calibration |
| 14:00 | |
| 15:00 | 15:00 - Natural Language Processing ESG insights for quantitative investment |
| 16:00 | 16:00 - Pricing Bermudan Swaptions with Supervised Learning Algorithms |
| 17:00 | 17:00 - Benchmark datasets in finance |
| 18:00 | 18:00 - New developments in Deep Pricing |
| 19:00 | 19:00 - Valuing Exotic Options and Estimating Model Risk |

Chair's opening & welcome

12:00 - 12:05

QuantMinds In Focus: Alpha & Quant Investing

Alpha generation models using machine learning techniques

12:05 - 12:50

QuantMinds In Focus: Alpha & Quant Investing

- Introduction to popular ML tools and possible applications to financial markets
- Challenges and problems using ML tools
- Finding alpha using ML tools and building autonomous automated trading systems (cross sectional vs time series modelling)
- Live examples of classification models including application to L/S equity portfolios, asset allocation modelling and advantages vs conventional Mean-Variance models
- Considering pattern recognition

Participants

Speaker: Andrea Nardon - Chief Quant Officer, Black Alpha Capital

Your checklist for building systematic trading strategies

13:00 - 13:45

QuantMinds In Focus: Alpha & Quant Investing

In this practical primer you will hear what it takes to build a systematic trading strategy from the ground up:

- What are the pieces of the puzzle? Where can you find what you need?
- What are the main pitfalls of going systematic, and why should you bother?

Participants

Speaker: Zoltan Eisler - MD, Head of Long Only Products, Capital Fund Management

Backtesting FX options trading strategies in Python

14:00 - 14:45

QuantMinds In Focus: Alpha & Quant Investing

Participants

Speaker: Saeed Amen - Founder, Cuemacro

Alternative sentiment data for managed futures

15:00 - 15:45

QuantMinds In Focus: Alpha & Quant Investing

- Does macro sentiment data work for managed futures?
- Application of Alexandria sentiment data
- Features engineering
- ML methods for feature selection and model training
- The defensive risk-profile of simulated sentiment-driven managed-futures strategies

Participants

Speaker: Artur Sepp - Director of Research, Quantica Capital AG

Quantitative investment strategies – can we trust them? Interactive roundtable

16:00 - 16:45

QuantMinds In Focus: Alpha & Quant Investing

Participants

Discussion host: Emilio Llorente Cano - Head of Investments, Recognition AMS

Discussion host: Athanasios Bolmatis - Head of Quantitative Investments & Strategies, CdR Capital

Discussion host: Daniel T Schmitt - Head of Systematic Strategies, SG Value Partners AG

Discussion host: Miquel Noguer I Alonso - Founder, Artificial Intelligence Finance Institute

Quant in Crypto-Land

17:00 - 17:45

QuantMinds In Focus: Alpha & Quant Investing

Cryptocurrencies and digital assets have experienced tremendous growth in the last few years. A completely digital asset class, crypto should be the perfect vehicle for a new generation of quant strategies but has proven to be very resilient to most quant strategies. This panel will discuss:

- The challenges and opportunities for quantitative models in the crypto space
- Different theses and techniques that have proven effective for discovering alpha in crypto markets
- How emerging trends such as decentralized finance (DeFi) are challenging some of the preconceptions of traditional quant models in capital markets.

Participants

Moderator: Jesus Rodriguez - Chief Technology Officer, IntoTheBlock

Panellist: Brad Koeppen - Head of Trading & President of Business Development, CMT Digital

Panellist: Edward Yu - Head of Quantitative Research, Genesis Trading

SCHEDULE

QuantMinds In Focus

23-27 May, 2022

Online virtual conference

PLEASE NOTE THIS IS THE 2021 AGENDA ALPHA & QUANT INVESTING - 25/05/2021 BST (British Summer Time, GMT+1)

| TIME | QUANTMINDS IN FOCUS: ALPHA & QUANT INVESTING |
|-------|--|
| 12:00 | 12:00 - Chair's opening & welcome 12:05 - Alpha generation models using machine learning techniques |
| 13:00 | 13:00 - Your checklist for building systematic trading strategies |
| 14:00 | 14:00 - Backtesting FX options trading strategies in Python |
| 15:00 | 15:00 - Alternative sentiment data for managed futures |
| 16:00 | 16:00 - Quantitative investment strategies – can we trust them? Interactive roundtable |
| 17:00 | 17:00 - Quant in Crypto-Land |

Chair's opening & welcome

12:00 - 12:05

QuantMinds In Focus: Interest Rate & Ibor

Inspired by Libor reform: Expected median of a Shifted Brownian Motion

12:05 - 12:50

QuantMinds In Focus: Interest Rate & Ibor

Participants

Speaker: Vladimir Piterberg - MD, Head of Quantitative Analytics & Development, NatWest Markets

Smiles without tears: Semi-Analytic Cap Pricing post-LIBOR with Smile and Skew

13:00 - 13:45

QuantMinds In Focus: Interest Rate & Ibor

- Term structure of volatility, smile, skew and mean reversion.
- Calibrated once for options of all maturities.
- Short rate and compounded rates are both state variables
- Analytic option prices are available including for SOFR/ESTER caps.

Participants

Speaker: Colin Turfus - Quantitative Analyst, Deutsche Bank

Speaker: Aurelio Romero-Bermudez - Quantitative Analyst, Deutsche Bank

SABR Model for RFR

14:00 - 14:45

QuantMinds In Focus: Interest Rate & Ibor

Participants

Speaker: Sander Willems - Quantitative Analyst, RBC Capital Markets

Interactive session: LIBOR reform: What's on quants' minds?

15:00 - 15:45

QuantMinds In Focus: Interest Rate & Ibor

- This session will consider some of the main challenges facing front-office quants in the next critical six months of the LIBOR transition.
- An industry perspective on the key modelling considerations when transitioning the legacy book, whether being actively migrated or relying on the ISDA fallback protocol
- What are some of the challenges for modelling and risk managing non-linear and exotic rates products through the transition?
- What are the practical steps required to manage model calibrations as market liquidity transfers from LIBOR referencing instruments to RFR?
- Insights on the latest developments for supporting legacy ICE LIBOR swap rate dependent trades such as CMS.

Participants

Discussion host: Matthew Dodgson - Director, PwC

Discussion host: Tim Greenwood - Director, PwC

Discussion host: Ann Battle - Head of Benchmark Reform, International Swaps and Derivatives Association

Discussion host: John Paul Barjaktarevic - Quantitative Analyst, Citi

Pricing in HW and Cheyette model in the Annuity measure

16:00 - 16:45

QuantMinds In Focus: Interest Rate & Ibor

The models are used to price interest rate options. We use here the Annuity measure to simplify and speed up calculations. This measure does not preserve the Markovian nature of the calculation, but we use corrector type approximation to revert to the Markovian nature and shown to improve efficiency and speed of calculations.

Participants

Speaker: Emiliano Papa - Senior Quant Analyst, Deutsche Bank

Genuine term rates remain elusive

17:00 - 17:45

QuantMinds In Focus: Interest Rate & Ibor

Overnight rate benchmarks, and term rates derived therefrom, are unsuitable replacements for IBOR benchmarks. IBORs account for roll-over risk, overnight rate benchmarks do not. Roll-over risk is incurred when longer-term lending is funded by shorter-term, rolled-over loans. If the interest rate benchmark is an overnight one, the exposure to roll-over risk is daily. A financial market equipped only with an overnight benchmark rate, and without a term-dependent benchmark like IBORs, fundamentally lacks a mechanism to capture and the necessary financial instruments to securitize roll-over risk. Markets after the termination of IBORs, as envisaged now, will be more incomplete and less transparent.

Participants

Speaker: Andrea Macrina - Reader in Mathematics, University College London

Looking forward to backward-looking rates

18:00 - 18:45

QuantMinds In Focus: Interest Rate & Ibor

Modelling and Calibrating the Volatility Decay

Participants

Speaker: Fabio Mercurio - Global Head of Quantitative Analytics, Bloomberg L.P.

SCHEDULE

PLEASE NOTE THIS IS THE 2021 AGENDA INTEREST RATE & IBOR - 26/05/2021

QuantMinds In Focus

23-27 May, 2022

Online virtual conference

BST (British Summer Time, GMT+1)

| TIME | QUANTMINDS IN FOCUS: INTEREST RATE & IBOR |
|-------|---|
| 12:00 | 12:00 - Chair's opening & welcome 12:05 - Inspired by Libor reform: Expected median of a Shifted Brownian Motion |
| 13:00 | 13:00 - Smiles without tears: Semi-Analytic Cap Pricing post-LIBOR with Smile and Skew |
| 14:00 | 14:00 - SABR Model for RFR |
| 15:00 | 15:00 - Interactive session: LIBOR reform: What's on quants' minds? |
| 16:00 | 16:00 - Pricing in HW and Cheyette model in the Annuity measure |
| 17:00 | 17:00 - Genuine term rates remain elusive |
| 18:00 | 18:00 - Looking forward to backward-looking rates |

Chairs opening & welcome

12:00 - 12:05

QuantMinds In Focus: Pricing, Trading & Volatility

Next generation local volatility

12:05 - 12:50

QuantMinds In Focus: Pricing, Trading & Volatility

- New efficient and general approach for calibration of local volatility models by Monte-Carlo simulation.
- Discrete methodology consistent with the Euler simulation scheme.
- Extends to general stochastic local volatility.
- Applications to options on volatility and multi dimensions.

Participants

Speaker: Jesper Andreasen - Kwant Father, Saxo Bank

Trading and hedging bitcoin and crypto asset volatility

13:00 - 13:45

QuantMinds In Focus: Pricing, Trading & Volatility

- Options and other bitcoin volatility products
- Bitcoin implied volatility index
- Variance swaps and the bitcoin variance risk premium
- Optimal dynamic delta hedging
- Net buying pressure
- Information in bitcoin option trades

Participants

Speaker: Carol Alexander - Professor, University of Sussex

Black Basket Analytics for Mid-Curves and Spread-Options

14:00 - 14:45

QuantMinds In Focus: Pricing, Trading & Volatility

- To price mid-curve or spread options we need flexible joint distributions of two underlying rates with fixed marginals: a Copula approach is a standard method to produce such joint distributions.
- One of several drawbacks is a low number of free parameters e.g. the most popular Gaussian copula has one parameter – correlation.
- Another is its numerical realisation: a 2D numerical integration underlying the price can be slow and potentially noisy, eps. for sensitivities.
- This session will propose a new way to unify two marginal distributions such that it has a large number of parameters permitting to calibrate to mid-curve or spread options with multiple strikes. The method is based on a “black basket” of log-normal processes having a fast analytical formulation and attractive simplicity.

Participants

Speaker: Alexandre Antonov - Chief Analyst, Danske Bank

Static replication of European multi-asset options

15:00 - 15:45

QuantMinds In Focus: Pricing, Trading & Volatility

Participants

Speaker: Sebastien Bossu - Principal, Ogee Group LLC

Semi-analytic pricing of double barrier options with time-dependent barriers and rebates at hit

16:00 - 16:45

QuantMinds In Focus: Pricing, Trading & Volatility

New semi-analytic methods for pricing derivatives – this session will feature a survey of recent results, the subject of a new book: Itkin, Lipton, Muravey, “Generalized Integral transforms in mathematical finance”, World Scientific, 2021.

Participants

Speaker: Andrey Itkin - Director, Senior Research Associate, Bank Of America

Asymmetric Greeks and their applications

17:00 - 17:45

QuantMinds In Focus: Pricing, Trading & Volatility

- Asymmetric analysis of P&L breakeven
- Vega+ and Vega- concept and motivation
- Portfolio hedging with asymmetric Greeks
- Illustrative example with different hedging approaches
- Extension to long/short exposures and their hedge

Participants

Speaker: Nadhem Meziou - Head of Fixed Income Quantitative Research, Natixis

Adding Optionality

18:00 - 18:45

QuantMinds In Focus: Pricing, Trading & Volatility

- Treating European optionality as a new binary operation
- Valuing Bermudan options on increments (stoptions) as repeated pseudo-addition
- Dynamic replication of Bermudan stoptions by rolling a vanilla option

Participants

Speaker: Peter Carr - Department Chair, FRE Tandon, New York University (NYU)

SCHEDULE

QuantMinds In Focus

PLEASE NOTE THIS IS THE 2021 AGENDA PRICING, TRADING & VOLATILITY - 27/05/
2021

23-27 May, 2022

Online virtual conference
BST (British Summer Time,
GMT+1)

| TIME | QUANTMINDS IN FOCUS: PRICING, TRADING & VOLATILITY |
|-------|---|
| 12:00 | 12:00 - Chairs opening & welcome 12:05 - Next generation local volatility |
| 13:00 | 13:00 - Trading and hedging bitcoin and crypto asset volatility |
| 14:00 | 14:00 - Black Basket Analytics for Mid-Curves and Spread-Options |
| 15:00 | 15:00 - Static replication of European multi-asset options |
| 16:00 | 16:00 - Semi-analytic pricing of double barrier options with time-dependent barriers and rebates at hit |
| 17:00 | 17:00 - Asymmetric Greeks and their applications |
| 18:00 | 18:00 - Adding Optionality |

Chair's opening & welcome

12:00 - 12:05

QuantMinds In Focus: Risk Management & Modelling

Participants

Speaker: Andrew McClelland - Director, Quantitative Research, Numerix

High Performance Computing in the financial industry: Algorithmic investment and trading

12:05 - 12:50

QuantMinds In Focus: Risk Management & Modelling

- Quantitative strategies in investment
- Big Data tools for Algorithmic Investing
- Scenarios for portfolio construction
- Balance sheet simulation and capital modelling
- Discounting and liquidity planning – clearing and collateral
- High performance platform options
- Libraries for numerical computing and Artificial Intelligence
- Conclusions

Participants

Speaker: Erik Vynckier - Non-executive Director, Foresters Friendly Society and Institute and Faculty of Actuaries

Latest developments of differential machine learning

13:00 - 13:45

QuantMinds In Focus: Risk Management & Modelling

Participants

Speaker: Brian Huge - Chief Quantitative Analyst, Danske Bank

Speaker: Antoine Savine - Quantitative Research, Danske Bank

Fair valuation of hybrid liabilities: merging expert judgement with market-consistency.

14:00 - 14:45

QuantMinds In Focus: Risk Management & Modelling

- A hybrid claim contains different type of risks: hedgeable, actuarial and systematic risks e.g. pension liabilities containing stock price risk, mortality risk, longevity risk, inflation risk. The valuation of a hybrid claim should take into account that each part should be priced with a different valuation principle.
- We introduce the 3-step hedge-based valuations: the unification of the theories of financial pricing and model-based pricing, merging the idea of risk-neutral pricing for hedgeable risks, diversification for actuarial risks and capital buffers for systematic risks.

Participants

Speaker: Daniel Linders - Assistant Professor in Actuarial Science & Mathematical Finance, University of Amsterdam

Modelling Energy Curves for XVA

15:00 - 15:45

QuantMinds In Focus: Risk Management & Modelling

- Seasonality in volatilities & correlations for energy curves; oil, gas, power, etc.
- XVA & the importance of correlations
- The Andersen ('10) model, akin to Cheyette ('92) with seasonality in response functions
- Estimation via state-space representation and filtering, akin to Dynamic Nelson-Siegel ('06)
- Objective measure-vs.-pricing measure implications and handling stochastic volatility

Participants

Speaker: Andrew McClelland - Director, Quantitative Research, Numerix

Climate Change Valuation Adjustments (CCVA) using parameterized climate change impacts

16:00 - 16:45

QuantMinds In Focus: Risk Management & Modelling

We introduce Climate Change Valuation Adjustment to capture climate change impacts on XVA that are currently invisible assuming typical market practice. To discuss such impacts on XVA from changes to instantaneous hazard rates we introduce a flexible and expressive parameterizations to capture the path of this impact to climate change endpoints, and transition effects. Finally we provide quantification of examples of typical interest where there is risk of economic stress from sea level change up to 2101, and from transformations of business models. We find that even with the slowest possible uniform approach to a climate change impact in 2101 there can still be significant XVA impacts on interest rate swaps of 20 years or more maturity. Transformation effects on XVA are strongly dependent on timing and duration of business model transformation. Using a parameterized approach enables discussion with stakeholders of economic impacts on XVA, whatever the details behind the climate impact.

Participants

Speaker: Chris Kenyon - Global Head of Quant Innovation, MUFG

CCPs: from CVA to economic capital

17:00 - 17:45

QuantMinds In Focus: Risk Management & Modelling

- We present a tractable continuous-time model for a CCP
- This extends the model in One Bad Apple, Andersen and Dickinson, Risk (2020) to continuous-time (based upon Levy/additive processes)
- Closed-form approximations to Economic Capital and the CVA
- Quantification of the risks associated to excessive leverage and fat tails (cf Nasdaq, Archegos and Par Plus) within a consistent dynamic framework

Participants

Speaker: Andrew Dickinson - Director, Bank of America Merrill Lynch

SESSIONS

QuantMinds In Focus

PLEASE NOTE THIS IS THE 2021 AGENDA RISK MANAGEMENT & MODELLING - 28/05/2021

23-27 May, 2022

Online virtual conference
BST (British Summer Time,
GMT+1)

Optimal VaR adaptation in transient environments

18:00 - 18:45

QuantMinds In Focus: Risk Management & Modelling

- Shortcomings of standard VaR approaches
- Characteristics of financial times series
- The Kalman Filter and Signal to Noise Ratios
- Enhancing standard VaR approaches
- Case study: Quick wins for regulatory VaR implementation

Participants

Speaker: Peter Quell - Head of Portfolio Modelling for Market & Credit Risk, DZ BANK

SCHEDULE

QuantMinds In Focus

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| 13:00 | 13:00 - Latest developments of differential machine learning |
| 14:00 | 14:00 - Fair valuation of hybrid liabilities: merging expert judgement with market-consistency. |
| 15:00 | 15:00 - Modelling Energy Curves for XVA |
| 16:00 | 16:00 - Climate Change Valuation Adjustments (CCVA) using parameterized climate change impacts |
| 17:00 | 17:00 - CCPs: from CVA to economic capital |
| 18:00 | 18:00 - Optimal VaR adaptation in transient environments |