



## INTEREST RATE REFORM CONFERENCE (A QUANT PERSPECTIVE) 4TH - 6TH MARCH 2020

### SPEAKERS

- Vladimir Piterbarg: MD, Head of Quantitative Analytics and Quantitative Development, NatWest Markets
- Marc Henrard: Managing Partner muRisQ Advisory and Visiting Professor, University College London
- Maria R Nogueiras: Head of Collateral Risk Analytics, Global Risk Analytics, HSBC
- Maurizio Garro: Senior Lead – IBOR Transition programme, Lloyds Banking Group
- Dominique Bang: Director, Head of Interest Rates Vanilla Modelling, Bank of America Merrill Lynch
- Andrei Lyashenko: Head of Market Risk and Pricing Models, Quantitative Risk Management (QRM), Inc.
- Diana Ribeiro: Deputy Head of Rates Quantitative Research, CB Markets, Lloyds Banking Group
- Adolfo Montoro: Director, Global Head of Market Data Strategy & Analytics, Market Valuation Risk Management, Deutsche Bank
- Clive Tucker: MD, Head of Structured Rates Trading Europe & Asia, RBC Capital Markets
- Navin Rauniar: LIBOR Transition Lead, HSBC
- Colin Turfus: Quantitative Analyst, Deutsche Bank
- Sasha Polishchuk: Director, Product Control Regulatory Initiatives, RBC
- Antoine Bouvet: Senior Rates Strategist, ING
- Emiliano Papa: Director – Quantitative Analyst, Deutsche Bank
- Jérôme Bonneton: Head of Rates & Credit Quantitative Research, Lloyds Bank
- Andrea Macrina: Reader in Mathematics, University College London (UCL)
- Nirmal Radhakrishnan: Senior Product Manager, Global Trade and Receivables Finance, HSBC
- Jos Gheerardyn: Co-founder and CEO, Yields.io

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## WEDNESDAY 4TH MARCH:

### PRE-CONFERENCE WORKSHOP DAY

The Future of LIBOR: Quantitative Perspective on Benchmarks, Overnight, Fallback and Regulation.  
by Marc Henrard: Managing Partner muRisQ Advisory and Visiting Professor, University College London

## THURSDAY 5TH MARCH:

### MAIN CONFERENCE, DAY ONE

Interest Rate Reform Conference (A Quant Perspective)

## FRIDAY 6TH MARCH:

### MAIN CONFERENCE, DAY TWO

Interest Rate Reform Conference (A Quant Perspective)

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Wi-Fi access will be also available at the venue to view presentations on laptops and mobile devices.

# PRE-CONFERENCE WORKSHOP: WEDNESDAY 4TH MARCH

DAY SCHEDULE: 09:00 – 17:30

BREAK: 10:30 – 11:00 / LUNCH: 12:30 – 13:30 / BREAK: 15:15 – 15:30

**THE FUTURE OF LIBOR: QUANTITATIVE PERSPECTIVE ON BENCHMARKS, OVERNIGHT, FALLBACK AND REGULATION.**  
**BY MARC HENRARD: MANAGING PARTNER MURISQ ADVISORY AND VISITING PROFESSOR,**  
**UNIVERSITY COLLEGE LONDON**

**COURSE OUTLINE:**

With the increased expectation of some IBORs discontinuation, the overnight benchmark changes and the increasing regulatory requirements related to benchmarks, a clear quantitative finance perspective on the impacts for derivatives is becoming paramount.

The recent regulations include the mandatory Variation Margin (VM) and the EU Benchmark Regulation (BMR). VM and the related remuneration of collateral means that overnight benchmarks are now ubiquitous. The EU BMR will have severe impacts on derivative market, e.g. on the EUR, GBP, SEK and DKK, from January 2022. For all major currencies, new benchmarks have been proposed and the market are in a transition phase. Each transition has its own idiosyncrasies and a common transition approach cannot be expected. On the EUR side, a recalibration approach with clean discounting has been introduced for EONIA to ESTR transition since 2 October 2019.

On the fallback side, several options have been proposed by ISDA. The results of the consultations has been to select the "compounding setting in arrears with 2 days shift" adjusted rate and the "historical median spread with a 5-year lookback period" approach. We present those options and emphasize their drawbacks. In particular the compounding setting in arrears still lack of details and, in the words of ISDA, is not workable for some products. We also present alternative options supported by different working groups. The historical spread option has led and continue to lead to significant value transfers. We present historical data in several currencies to support the theoretical developments. The presentation focuses is on the quantitative finance impacts for derivatives.

We also describe the new products associated to the new benchmarks and the status in term of liquidity for each market.

# PRE-CONFERENCE WORKSHOP: WEDNESDAY 4TH MARCH

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**THE FUTURE OF LIBOR: QUANTITATIVE PERSPECTIVE ON BENCHMARKS, OVERNIGHT, FALLBACK AND REGULATION.**  
**BY MARC HENRARD: MANAGING PARTNER MURISQ ADVISORY AND VISITING PROFESSOR,**  
**UNIVERSITY COLLEGE LONDON**

COURSE OUTLINE CONTINUED:

## **Brief history of LIBOR**

### **EU Benchmark regulation**

#### **Cash-collateral discounting and overnight benchmarks**

- The standard collateral results and their exact application
- What is hidden behind OIS discounting (and when it cannot be used)?
- Impact of new benchmarks on valuation

#### **The alternative benchmarks:**

- Progress in different jurisdictions
- SOFR, reformed SONIA, ESTR, SARON, TONAR.
- Secured v unsecured choice.
- EFFR and SOFR: two overnight rates in one currency! Differences and transition.
- EONIA and ESTR: recalibration and transition
- SOFR intra-month seasonality
- Curve calibration impacts

#### **Collateral and discounting transition at CCPs**

- USD: LCH/CME change from EFFR to SOFR: discounting and cash compensation (October 2020)
- USD: LCH/CME change from EFFR to SOFR: risk compensation
- EUR: LCH/EUREX change from EONIA to ESTR: discounting and cash compensation (June 2020)

## **Fallback procedure**

- ISDA consultation results
- The adjusted rate: compounding setting in arrears
- Quantitative issues with compounding setting in arrears
- Term rates: a credible alternative?
- The adjustment spread: historical median approach
- Value transfer: transfers already incorporated and transfers to come
- Change of term sheet in existing vanilla instruments
- Presenting the fallback in the language of quantitative finance
- Fallback details still to be clarified
- Fallback for ED futures and options

## **Risk management of transition**

- Delta risk through the transition
- Potential impacts on systems
- Multi-curve: double or quit?
- Vanilla becoming exotics: cap/floor and swaptions
- Fallback and UMR rules
- Value transfer and arbitrage opportunities

## **Clearing house adoption**

- Differences between bilateral and CCP rules
- Fallback new wording adoptions
- Valuation of legacy uncleared swaps, cost of signing the protocol
- CCP divergence from ISDA definitions

## **New products associated to new benchmarks**

- Volume and liquidity in the new benchmarks
- Futures on overnight benchmarks
- Deliverable swap futures

# MAIN CONFERENCE DAY ONE: THURSDAY 5TH MARCH

08:00 – 09:00 REGISTRATION AND MORNING WELCOME COFFEE

CONFERENCE CHAIR: NAVIN RAUNIAR: LIBOR TRANSITION LEAD, HSBC

## 09:00 – 09:45 IBOR TO RFR – OVERVIEW AND RECAP

- Context – financial markets affected
- The wider benchmark reform agenda
- Types of term benchmark rate
- ARR methodologies/jurisdictions
- Global progress – EU vs. UK vs. US

**Presenter: Navin Rauniar: LIBOR Transition Lead, HSBC**

## 09:45 – 10:30 A QUANT PERSPECTIVE ON LIBOR FALLBACK

- The current status on fallback
- Potential difficulties with the proposed options
- Value transfer in the fallback
- The RFR term rates

**Presenter: Marc Henrard: Managing Partner muRisQ Advisory and Visiting Professor, University College London**

10:30 – 11:00 MORNING BREAK AND NETWORKING OPPORTUNITIES

## 11:00 - 11:45 FOCUSING ON THE QUANTITATIVE IMPACTS AND CHALLENGES ON RISK MODELS

**Presenter: Maria R Nogueiras: Head of Collateral Risk Analytics, Global Risk Analytics, HSBC**

## 11:45 - 12:30 IBOR TRANSITION AND LINKAGE TO THE RISK & CAPITAL FRAMEWORK

**Presenter: Adolfo Montoro: Director, Global Head of Market Data Strategy & Analytics, Market Valuation Risk**

12:30 - 13:30 LUNCH

# MAIN CONFERENCE DAY ONE: THURSDAY 5TH MARCH

## **13:30 – 14:15** LOOKING FORWARD TO BACKWARD-LOOKING RATES: A MODELING FRAMEWORK FOR RATES REPLACING IBORS

- Introducing backward-looking rates
- Extending classic framework to model both forward- and backward-looking rates
- Modeling generalized forward rates using Forward Market Model (FMM)
- Completing FMM using Markovian HJM extension
- Implementing the new modeling framework
- Numerical examples

**Presenter: Andrei Lyashenko: Head of Market Risk and Pricing Models, Quantitative Risk Management (QRM), Inc.**

## **14:15 – 15:00** PRACTICAL IMPLICATIONS FROM THE CHANGES TO €STR AND WHAT WILL HAPPEN TO EURIBOR

**Presenter: Antoine Bouvet: Senior Rates Strategist, ING**

## **15:00 – 15:30** AFTERNOON BREAK AND NETWORKING OPPORTUNITIES

## **15:30 - 16:15** PRICING OF OPTIONS AND THE TRANSITIONING FROM LIBOR TO RFR RATES

- Yield Curve construction
- Derivatives pricing
- Application to cap, floor and Swaption pricing in the transition period when both Libor and OIS co-exist

**Presenter: Emiliano Papa: Director – Quantitative Analyst, Deutsche Bank**

# MAIN CONFERENCE DAY ONE: THURSDAY 5TH MARCH

16:15 – 17:00 PANEL: INTEREST RATE REFORM

## PANELLISTS:

- **Navin Rauniar:** LIBOR Transition Lead, HSBC
- **Vladimir Piterbarg:** MD, Head of Quantitative Analytics and Quantitative Development at NatWest Markets
- **Diana Ribeiro:** Deputy Head of Rates Quantitative Research, CB Markets, Lloyds Banking Group
- **Nirmal Radhakrishnan:** Senior Product Manager, Global Trade and Receivables Finance, HSBC
- **Clive Tucker:** MD, Head of Structured Rates Trading Europe & Asia, RBC Capital Markets
- **Adolfo Montoro:** Director, Global Head of Market Data Strategy & Analytics, Market Valuation Risk Management, Deutsche Bank

## DISCUSSION POINTS:

- There is a lot of rhetoric issued by the BoE and Fed on using backward looking rates – how are you coping with the modelling challenge around moving from forward to backward looking rates?
- Are you finding different functions within your institutions adopting different approaches?
- Globally we receive conflicting messages where BoE says no to RFR + CS and Fed being open to RFR + CS. The same applying to backward vs. forward looking – are we heading to multi rate environment where no single discounting curve will take precedence?  
Does this not just increase the level of systemic risk to the economy, alongside the idiosyncratic risks that currently exist?
- For SONIA the data goes back to 1997 and makes it easier to model given the existence of this RFR. Nevertheless, there is a lot of debate around the construction of SOFR. From a quant perspective, is SOFR viable in the long run?
- Given the Sept spike in SOFR, does SOFR represent a real risk free rate?
- So we did not see the spikes in Dec, but we hear much rhetoric about the US economy slowing (coronavirus, trade wars, etc), how do we see SOFR behaving over the next year or so? From a quant perspective have you modelled this?
- If we do reach that economic stress point, do we see “SOFRgeddon” occurring i.e. SOFR heads south?
- And risk is not just about looking forward, but looking backwards – how about modelling the time series for SOFR? Are we comfortable taking o/n LIBOR and applying spread adjustment, or what about FF or Prime?
- In summary, given what we have talked about, have you as a client, started modelling for alternatives such as AMERIBOR, ICE BYI, SONET, AONIA? How about an IR with a CS component added e.g. ITRX FIN, etc.?

# MAIN CONFERENCE DAY TWO: FRIDAY 6TH MARCH

08:30 – 09:00 MORNING WELCOME COFFEE

CONFERENCE CHAIR: NAVIN RAUNIAR: LIBOR TRANSITION LEAD, HSBC

## 09:00 – 09:45 IMPACT OF IBOR ON RISK METRICS AND MODELS

- Risk Data
- Risk Metrics
- Risk Calculation
- Model Governance
- Product Governance

**Presenter: Navin Rauniar: LIBOR Transition Lead, HSBC**

## 09:45 – 10:30 ANALYTIC PRICING OF OPTIONS ON COMPOUNDED RATES

- Extension of Hull-White framework to address compounded rates
- Derivation of analytic pricing kernel
- Application to cap, floor and swaption pricing
- Options on averaged SONIA payoffs

**Presenter: Colin Turfus: Quantitative Analyst, Deutsche Bank**

10:30 – 11:00 MORNING BREAK AND NETWORKING OPPORTUNITIES

## 11:00 - 11:45 PITFALLS OF ISDA PROTOCOL

- ISDA Benchmark Supplement and Protocol amendments
- Controversies around pre-cessation trigger: ISDA, FCA and ICE prospective
- Potential complications with bilateral trades

**Presenter: Sasha Polishchuk: Director, Product Control Regulatory Initiatives, RBC**

## 11:45 - 12:30 TERM RATES VS OVERNIGHT RFRS: MIND THE RISK!

### Abstract:

The transition from term interbank offer rates (IBOR) to alternative overnight benchmarks, so-called risk-free rates (RFR), has generated much debate and several industry consultations. We revisit term rates and associated forward rate agreement systems in two situations: a) when perfect liquidity is assumed, and b) when there is uncertainty about the availability of tenor-based term rates. We shall discuss the potential impact on borrowing costs and investment returns when only overnight risk-free interest rate benchmarks (RFRs) are available. It turns out, RFRs give maximum exposure to roll-over risk.

**Presenter: Andrea Macrina: Reader in Mathematics, University College London (UCL)**



# MAIN CONFERENCE DAY TWO: FRIDAY 6TH MARCH

12:30 - 13:30 LUNCH

## 13:30 – 14:15 POST-LIBOR CONVEXITY ADJUSTMENTS

- An overview of the background of convexity adjustments
- Assess the transition from LIBOR to risk-free rates payoffs
- Convexity adjustments arising from referencing adjusted rates
- Consider the differences in average versus compounding

**Presenter: Jérôme Bonneton: Head of Rates & Credit Quantitative Research, Lloyds Bank**

## 14:15 – 15:00 IBOR TRANSITION AND MODEL UNCERTAINTY

- How the IBOR transition impacts other models
- Definition of model uncertainty
- ML techniques to deal with uncertainty propagation through the model inventory

**Presenter: Jos Gheerardyn: Co-Founder and CEO, Yields.io**

15:00 – 15:15 AFTERNOON BREAK AND NETWORKING OPPORTUNITIES

## 15:15 - 16:00 LIBOR THROUGH A FRTB LENS

- Program Overlap
- Technical overall
- At the model/data level NMRF etc where the two can help each other

**Presenter: Satinder (Sid) Jandu: Managing Director, Viewset Limited**

## 16:00 - 16:45 REVIEW THE MODELLING FRAMEWORKS FOR RISK FREE RATES REPLACING LIBOR

- What are the key impacts on the models?
- Do we need to change our MRM policy?
- What approach?
- What future should be expected?

**Presenter: Maurizio Garro: Senior Lead – IBOR Transition Programme, Lloyds Banking Group**

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Yields.io was founded by Jos Gheerardyn and Sébastien Viguié. The company is expanding quickly and has offices in Brussels and London. Yields.io has an international portfolio of clients with both investment banks as well as regional financial institutions.

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4TH - 6TH MARCH 2020

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