# The 8th Fixed Income Conference

## Steigenberger Hotel Herrenhof, Vienna

## 10th / 11th / 12th October 2012

Due to the great success of all our previous Fixed Income conferences, WBS Training are pleased to announce that we are heading to the wonderful city of Vienna on 10th, 11th and 12th October 2012.

The highly popular three streamed format will be retained as in previous years, along with three workshops being presented on Wednesday 10th October.

At our conference, delegates are not restricted to attend single streams.
You have the opportunity to hop around the different streams and attend the presentations that benefit you the most. All stream presentation times run concurrently with each other.

## THE 8TH FIXED INCOME CONFERENCE PRESENTER LIST:

**Jesper Andreasen**
(Global Head of Quantitative Research, Danske Bank)

**Peter Austing**
(Quantitative Analyst, Barclays Capital)

**Martin Baxter**
(Analyst, Fixed Income Quant Group, Nomura International)

**Sönke Blunck**
(Senior Quantitative Analyst, Landesbank Berlin)

**Alexandre Bon**
(Head of Credit Risk, Murex)

**Andrey Chirikhin**
(Managing Director, Head of CVA and CCR(IMM) Quantitative Analytics, RBS)

**Peter Dobranszky**
(Head of Risk Model Validation, BNP Paribas)

**Christian Fries**
(Head of Model Development, Group Risk Control, DZ Bank)

**Jon Gregory**
(Partner, Solum Financial Partners)

**Paul Howell**
(Nomura International, VP, Interest Rate Derivatives Trading)

**Peter Jaeckel**
(Deputy Head of Quantitative Research, VTB Capital)

**Chris Kenyon**
(Director, Quantitative Research, CVA, Lloyds Banking Group)

**Jörg Kienitz**
(Head of Quantitative Analysis, Treasury, Deutsche Postbank)

**Christoph Konvicka**
(Head of Credit Portfolio Modelling Section, VP, Bank Austria)

**Wolfgang Kluge**
(Head of Options Quants Europe, BNP Paribas)

**Hicham Lahlou**
(CEO & Co-Founder, Xcelerit)

**William McGhee**
(Head of Hybrid Quantitative Analytics, RBS)

**Antoine Miribel**
(Head of CVA Trading, Global Finance and FX, Deutsche Bank)

**Massimo Morini**
(Head of Credit Models, Banca IMI)

**Giovanni Pepe**
(Manager in the Banking Supervisory Department, Head of Financial Risk Analysis Practice, Banca d'Italia)

**Rade Plavsic**

**Vladimir Piterbarg**
(Global Head Of Quantitative Analytics Group, Barclays)

**Andrea Prampolini**
(Head of Counterparty Risk Management, Banca IMI)

**Dmitry Pugachevsky**
(Director of Research, Quantifi)

**Michael Pykhtin**
(Senior Economist, Federal Reserve Board)

**Dan Rosen**
(CEO, R2 Financial Technologies)

**Marc-Olivier Seguin**
(Head of Fixed Income Quantitative Research, CVA/LVA and FX Derivatives, BNP Paribas)

**Emanuel Schörnig**
(Managing Director, Ithuba Capital)

**Alexander Sokol**
(Numerix)

**Igor Smirnov**
(Head of Fixed Income Quantitative Research Europe, Banco Santander)

**Peter Whitehead**
(Director, Group Valuation Oversight, Deutsche Bank)

## Discounting, Funding, Collateralization: From Solid Foundation and Intuition to Calibration of Models
by Christian Fries, DZ Bank

**Part 1: From Solid Foundations and Intuitions to Models**

- Discounting Revisited: Mark-to-Market versus Replication of Cash Flows
- Resolving the Own-Credit Paradox (making P&L when own credit rating worsens)
- Assumptions: Being a net funder and the P&L take out
- Collateralization and Funding: Cash Flows
- Valuation with Stochastic Funding (Funded Replication)
- Collateralization and Funding: Modelling:

- The Cross Currency Analogy
- The Risky Payoff (Default) Analogy
- Cross Currency and Defaultable LIBOR Market Model
- The LIBOR Market Model with Stochastic Funding

- Relation to DVA, CVA and the FVA: Valuation versus Valuation Adjustments
- Valuation of Unilateral Collateralized Products (Plain Vanillas become Complex)
- Sensitivities and Hedging in a Partially Collateralized Portfolio

**Part 2: Building Forward and Discounting Curves, Calibration of Models**

- Funded Replication (revisited)
- Calibration of Models:

o Discount Curves, Forward Curves and Convexity
o Bootstrapping Curves:

- OIS Discounting
- Funded Discounting
- Unilateral Collateralized
- Collateralization in Non-Trade Currency
- Funding in Non-Trade Currency

o Calibration to Volatilities

- Valuation and Sensitivities

Day schedule: 09:00 – 17:00
Break: 10:30 – 10:45
Lunch: 12:30 – 13:30
Break : 15:15 – 15:30

## The Quantitative Foundations of Counterparty Risk, CVA and Funding
by Jon Gregory, Solum Financial Partners

**Delegates will receive a complimentary copy of the Wiley Finance Series 2012 publication: Counterparty Credit Risk and Credit Value Adjustment: A Continuing Challenge for Global Financial Markets, 2nd Edition by Jon Gregory.**

**CVA**

- Basic definitions and motivation
- Regulatory requirements
- Exposure quantification
- Default probability estimation and mapping methods
- Hedging CVA

**Wrong-way Risk**

- Empirical evidence
- Portfolio wrong-way risk
- Trade level wrong-way risk
- Central counterparties
- Hedging and cross-gamma

**Debt Value Adjustment (DVA)**

- Formulas
- Hedging and monetising DVA
- Impact of default correlation
- DVA and closeout

**Funding and Valuation**

- The interaction between CVA, valuation and funding
- OIS discounting
- Funding value adjustment (FVA)
- Optimisation of CVA, DVA and FVA - where will it all lead?

Day schedule: 09:00 – 17:00
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## CVA and CCR: Approaches, Similarities, Contrasts and Implementation
by Andrey Chirikhin, RBS

**Economic and Legal Background of Counterparty Risk**

- Economics of market and counterparty risk
- Legal framework: Basel III, CRD4, Dodd-Frank
- Capital charges: VAR, CCR and CVA VAR
- Wrong way risk
- Collateral modelling and centralized counterparties

**CVA Theory**

- CVA as hedgeable component of credit risk
- Collateralized vs uncollateralized valuation
- Fair valuation adjustments (CVA, FVA, etc): a survey
- Formal derivation and economic meaning
- Model vs payoff in CVA pricing
- CVA and CCR similarities and contrasts

**Modelling and Valuation**

- Risk neutral (CVA) vs historical (CCR) approaches
- Hybrid risk-neutral modelling, calibration and theoretical hedging
- CCR modelling, estimation and capital requirements calculation
- Wrong way CVA
- "At the point" pricing vs American Monte Carlo for credit risk

**Implementation and Daily Operations**

- CVA vs CCR implementation requirements and challenges
- CVA vs CCR infrastructure and synergies
- Use test and daily operations
- Integrated hedging and capitalisation

Day schedule: 09:00 – 17:00
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Break : 15:15 – 15:30

# MAIN CONFERENCE DAY 1: THURSDAY 11TH OCTOBER

## Interest Rates, Hybrids & Volatility Modelling Stream

**08:00 – 08:50**
Registration

**08:50 – 10:30**
Decently Steep – Approximating Spread and Basket Options
by Jesper Andreasen, Danske Bank

- Implied volalitility expansions of spread and basket options as geodesic distance problems.
- Numerical solution of geodesic problems: local and global solution.
- Delta and Vega profiles of basket and spread options.
- Higher order expansions, forward volatility, and single time step finite difference implementation.
- Numerical examples.

**10:30 – 11:00**
Break

**11:00 – 12:30**
Valuing with Correlation Smile – Why correlation smile is important, how to mark it, which models to use and avoid
by Peter Austing, Barclays Capital

- The meaning of correlation smile, and how to mark it
- Good versus bad models
- Why copulas are very bad (even if they price correlation correctly)

**12:30 – 13:40**
Lunch

**13:40 – 15:10**
Replication of CMS Spread Options
by Sönke Blunck, Landesbank Berlin

- Setting: CMS Spread Options under an arbitrary copula model (i.e. two marginal distributions and a copula)
- We construct explicitly a replication of CMS Spread Options by cash-settled swaptions such that all first order marginal greeks (i.e. with respect to the marginal distributions) are matched
- First step: splitting the CMS Spread Option into two single-underlying payoffs such that all first order marginal

## CSA, Collateral, CVA, Discounting and Funding Stream

**08:00 – 08:50**
Registration

**08:50 – 10:30**
Rates, Funding and Collateral: Managing Derivatives Liquidity
by Igor Smirnov, Banco Santander

- Simple theoretical framework
- Hidden risks of collateral-implied funding
- Differentiating funding sources
- Uncollateralised funding model

**10:30 – 11:00**
Break

**11:00 – 12:30**
Funding Valuation Adjustment
by Peter Whitehead, Deutsche Bank

- Origins and Consequences of the Credit Crisis
- Tenor Basis
- CSA and OIS Discounting
- Credit Value Adjustment- CVA
- Risky Pricing with CVA only, DVA only and both CVA and DVA
- A Simple Example- The plain vanilla IR Swap
- DVA
- Funding Value Adjustment
- References

**12:30 – 13:40**
Lunch

**13:40 – 14:25**
Collateral, Funding and Discounting
by Vladimir Piterbarg, Barclays

- Using collateralized assets as building blocks in a model without a risk-free rate
- Multi-currency and choice collateral
- Examples

## CVA & Basel III: Pricing & Trading Stream

**08:00 – 08:50**
Registration

**08:50 – 10:30**
Trading Bilateral CVA
by Andrea Prampolini, Banca IMI

- A status update on discounting and fair value adjustments
- Derivative DVA hedging: CVA desk and the Treasury
- Pricing liquidity costs of novations
- Payoff of a break up clause

**10:30 – 11:00**
Break

**11:00 – 12:30**
DVA for Assets
by Chris Kenyon, Lloyds Banking Group

- Assets that depend on existence of the company have DVA
- This DVA has two potential effects: Accounting and Tax
- Hedging strategy
- Example: DVA on Goodwill for US banks 2007-2011
- Conclusions

**12:30 – 13:40**
Lunch

**13:40 – 15:10**
Wrong Way Risk and CVA
by Marc-Olivier Seguin, BNP Paribas

- Current situation on Wrong Way Risk in Basel 3
- Analysis of risk management P&L of the CVA on simple product with credit correlation
- Overviews of existing credit hybrid models / wrong way risk models

greeks are matched
- Second step: Hagan replication of these single-underlying payoffs by cash-settled swaptions
- Numerical tests: Replication of CMS Spread Options using the SABR Model and the Gaussian Copula

14:25 – 15:10
Total Return under Consideration of Collateral, Funding & Credit Risk
by Emanuel Schörnig, Ithuba Capital

- Estimating cost of funding: different sources of funding, variable funding need due to collateral posting, haircuts
- Additional consideration of credit risk, calculation of expected loss and impact on interest-rate risk management
- Estimating total return over the life of an asset
- Using total-return considerations to optimize time of asset disposal

15:10 – 15:30
Break

15:10 – 15:30
Break

15:10 – 15:30
Break

15:30 – 17:00
Risk Management in the Presence of Extreme Smiles: Are Simple Products Still Simple?
by Wolfgang Kluge, BNP Paribas

- Reasons for the extreme smiles currently present in EUR swaption markets
- Effects of high vols on high strike swaptions for risk management on products that are (in theory) simple, eg CMS swaps, CMS options
- A simple approach to extrapolate the smile in areas that are not traded (or not arbitrage-free) keeping the traded area unchanged

15:30 – 17:00
Funding, Collateral and Cross-Currency: Model Risk
by Massimo Morini, Banca IMI

- There is not only one FVA. Different choices and their effects
- Regulations, Distortions and Basel III
- Cross-currency and the strange case of the risk-free rate

15:30 – 17:00
Pricing and Trading CVA in the Basel 3 World
by Antoine Miribel, Deutsche Bank

- What affects the CVA charge
- Basel 2 and 3 highlights
- Basel 2 and 3 impact on price
- The old days of CVA trading
- Basel 3, a new constraint for risk management
- CVA and CVA Var Optimization

17:00 – 18:00
Open Floor Q&A Sessions
Pricing Space: Discounting, Funding, Collateral, and Related Pricing Adjustments

Chair:
**Massimo Morini**
Head of Credit Models, Banca IMI

Topics:

- Are Credit/Debit/Funding adjustments really additive?
- Can all boil down to spreads and discounts?
- Is the notion of an objective unique price to be abandoned?
- What if contagion is strong and Gap risk makes collateral effectiveness limited?
- How can one price and hedge Gap risk effectively?
- Is global consistent valuation a necessity following the global nonlinear nature of the adjustments?
- Consequences on systems architectures? Is the industry ready?

Panelists:

**Jesper Andreasen**
Global Head of Quantitative Research, Danske Bank

**Bernhard Edegger**
Interest Rates Options Trading, Erste Group Bank

**Chris Kenyon**
Director, Quantitative Research, CVA, Lloyds Banking Group

**Igor Smirnov**
Head of Fixed Income Quantitative Research Europe, Banco Santander

17:00 – 18:00
Open Floor Q&A Sessions
View Interest Rates and CVA Stream Panels

17:00 – 18:00
Open Floor Q&A Sessions
Risk and Capital: VaR of CVA, CCR, CCP, Capital Charges & Basel III

Chair:
**Martin Baxter**
Analyst, Fixed Income Quant Group, Nomura International

Topics:

- Will uncollateralized counterparty risk be punished by excessive capital requirements?
- When we add VaR/ES of CVA isn't a proper assessment beyond current technology?
- Is global consistent valuation a necessity following the global nonlinear nature of the adjustments?
- Are current attempts of CVA restructuring (Papillon, Score, Fixed CVA Margin Lending, Floating CVA Margin Lending) promising?
- Can Floating CVA really address the wrong CVA volatility direction coming from upfront of fixed CVA?
- Should collateral re-hypothecation be forbidden? The 3.5 virtual factor
- Will CCP help? Can CCP default? Systemic Risk?

Panelists:

**Peter Jaeckel**
Deputy Head of Quantitative Research, VTB Capital

**Giovanni Pepe**
Banking Supervision Department, Banca d'Italia

**Dmitry Pugachevsky**
Director of Research, Quantifi

**Emmanuel Ramambason**
Global Head of CVA and Fixed Income Trading, BNP Paribas

19:45
Gala Dinner
– Restaurant Griechenbeisl

19:45
Gala Dinner
– Restaurant Griechenbeisl

19:45
Gala Dinner
– Restaurant Griechenbeisl

## Interest Rates: Modelling, Pricing & Trading Stream

### 09:00 – 10:30
**Basel Impact on IR Derivatives Business**
by Paul Howell, Nomura International

- Impact of market risk capital requirements
- Impact of counterparty credit capital requirements

### 10:30 – 10:50
Break

### 10:50 – 11:40
**Pricing IR Derivatives in the Multiple Discount Curves-Environment**
by Rade Plavsic

Funding curves – needs, setup, developments
OIS vs FX market
CSA and cheapest to deliver

- Risks and management
- Collateral management

Collateral quality in discounting

- Funded vs collateralised positions
- Haircut vs discounting

Blended discount curves

- Building
- Risk calculation, segregation, aggregation

CSA optionality

- Concept, pricing, market observability and hedging

## CVA, Modelling, Trading and Funding Stream

### 09:00 – 10:30
**Beyond the CVA Formula: Modeling Trade-Specific Calibration, Wrong Way Risk, and Gap Risk with Exposure Sampling**
by Alexander Sokol, Numerix

- By replacing the CVA formula by an expectation under a stochastic process of exposures, exposure sampling method expands the range of models which can be applied to CVA

- Applications of the exposure sampling method:
- Using trade-specific calibration with path-consistent CVA simulation to reduce the difference between current exposure obtained from CVA simulation and accounting MtM
- Market and historical calibration of wrong way risk and gap risk models in CVA

### 10:30 – 10:50
Break

### 10:50 – 12:30
**Re-Thinking Valuations – CVA, Illiquid Markets, and Model Risk**
by Dan Rosen, R2 Financial Technologies

Model risk and CVA

- CVA definition, models and computation
- Illiquid spreads and model risk
- The weird life of bilateral CVA
- Multiple personalities of CVA: internal models and accounting, Basel III, and banking book view
- Hedging CVA and model risk
- Calculating CVA market risk
- Wrong-way risk, model risk and stress testing

Concluding remarks

## CCR, Regulations & Capital Requirements Stream

### 09:00 – 10:30
**Credit Risk on the Trading Perimeter**
by Peter Dobranszky, BNP Paribas

- Dynamics of credit spreads, bond basis, index skew and risk premium
- Random matrix theory and the generic spread curves
- Recovery rates impacting capital charges
- Migration risk versus spread risk
- IRC plus VaR versus CCR plus CVA VaR
- Double counting issues in the course of capital computations

### 10:30 – 10:50
Break

### 10:50 – 11:40
**Optimising Capital Charges and the Effects of Hedging Under Basel III**
by Dmitry Pugachevsky, Quantifi

- Basel III capital charges
- The effect of hedging under Standardised and IMM approaches
- Optimising Basel III capital charges

11:40 – 12:30
Accelerating Quantitative Finance the Easy Way
by Hicham Lahlou, Xcelerit

- How to achieve dramatic software performance gains in derivatives pricing and risk management
- Easy ways to leverage hardware accelerators (e.g. GPUs and multi-core)
- The cost-benefit tradeoff of porting existing code or developing new code using hardware accelerators
- Specific example (Interest Rate): LIBOR Swaption Portfolio Pricing

12:30 – 13:30
Lunch

13:30 – 15:00
An Efficient Implementation of the SABR Model by the Method of Conditional Integration
by William McGhee, RBS

- Issues associated with the use of the SABR approximation
- Developing the conditional integration approach
- SABR Process vs SABR Approximation
- The SABR model in practice
- Mean-reverting volatility extension

15:00 – 15:15
Break

15:15 – 16:30
Practical Issues of OIS, CVA and Libor Market Models
by Jörg Kienitz, Deutsche Postbank

- OIS, CVA, etc.
- Two curve LMM (two approaches)
- Two curve LMM (correlation)
- Stochastic Volatility extension of LMM
- Application to market data for Caps and Swaptions

End of Conference

12:30 – 13:30
Lunch

13:30 – 15:00
Bond Repo Pricing with Funding and Credit
by Martin Baxter, Nomura International

- Bond Repos are an established product, but involve several advanced pricing issues
- Credit pricing issues: correlation between counterparty and issuer, gap risk
- Funding pricing issues: proper handling of funding including haircuts and variation margin
- Exotic repo trades and features

15:00 – 15:15
Break

15:15 – 16:30
CVA Building Blocks: Vanishing Options with Smile
by Peter Jaeckel, VTB Capital

- The need for CVA with credit-asset correlation
- A time change generated by stochastic information arrival
- Asset response to credit information
- Volatility smiles
- Incorporating further convexity corrections

End of Conference

11:40 – 12:30
Swinging Basel
by Giovanni Pepe, Banca d'Italia

- Bullets to be confirmed

12:30 – 13:30
Lunch

13:30 – 15:00
Counterparty Credit Risk Capital and CVA
by Michael Pykhtin, Federal Reserve Board

- Counterparty credit exposure and CVA
- Trading book loss under counterparty risk
- Economic capital: counterparty risk as market risk
- Economic capital: counterparty risk as credit risk
- Counterparty risk capital under Basel III
- Basel III CVA capital charge

15:00 – 15:15
Break

15:15 – 16:30
Systemic & Systematic Risk in Credit Portfolio Management
by Christoph Konvicka, Bank Austria

- Macroeconomic indicators and fundamental key corporate figures
- Macroeconomic dependence modelling
- Application to economic capital calculation & credit risk stress testing
- Case study CEE

End of Conference

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