

Course highlights:

Tools used to validate complex FX derivatives

The process of validating credit and market risk models

Understanding the sources of model risk

How to develop an enterprise wide model risk management framework

Examination of the regulatory drivers behind model validation

Model validation methods for interest rate models

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# Practical approaches to managing model risk

New York

13 & 14 October, 2010

London

18 & 19 October, 2010

## About the course

Model risk can arise through the misspecification, misapplication and improper implementation of financial and economic models. Without strict internal governance and periodic validation, models used to measure risk may themselves become an unintended source of risk and can have adverse effects on financial institutions including losses and damaged reputations. Since the financial crisis, regulators and senior management within financial institutions are determined to ensure these models remain resilient and robust.

This highly topical two day seminar will offer a diverse range of perspectives focussing on the challenges facing those involved in the validation of pricing and risk models. Practitioner led sessions focussing on validating credit default swaps, FX options, equity derivatives and interest rate derivatives will be covered coupled with in-depth case studies. You will gain a thorough understanding of the challenges faced in validating specific market and credit risk models. Practitioners will also share their thoughts on how to incorporate model validation into a firms overall risk management and governance framework.

## Venues and accommodation

### New York

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### Learning outcomes:

**By the end of the course you will gain an advanced understanding of the importance of model validation and strict model governance in theory and in practice. Specific practitioner led case studies will focus on the challenges and solutions used in the validation of pricing models and risk models.**

### Specifically you will receive knowledge about:

- How to validate credit value adjustment models
- How to validate incremental risk charge models
- The importance of good profit and loss in the validation of credit default swaps
- Backtesting market risk models
- The use of scenario analysis to validate pricing models
- Stress testing credit risk models

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### Who should attend?

**This course has been designed for financial institutions that possess a model validation function for their front office pricing and risk models. It is particularly relevant for the following areas:**

- Model Validation
- Pricing Validation
- Risk Modelling
- Front Office Modelling
- Internal Audit
- Model Review
- Model Risk
- Model Control
- Quantitative Analysis
- Market Risk
- Credit Risk
- Risk Control

## Course tutors:

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### New York

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**Jon Hill**  
Vice President, Head of Model Validation,  
Internal Audit  
MORGAN STANLEY

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**Craig Wotherspoon**  
Head of Model Validation  
KBC FINANCIAL PRODUCTS

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**Douglas Gardner**  
Managing Director, Head of Model  
Validation  
WELLS FARGO SECURITIES

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**Xiaozhong Liang**  
Vice President, Model Validation  
STATE STREET CORPORATION EXECUTIVE

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**Jan Dash**  
President  
J.DASH CONSULTANTS LLC

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**Sanja Hukovic**  
Head of EMEA Model Review  
UBS

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**Bernhard Hientzsch**  
Director, SIG Model Validation  
and Approval  
WELLS FARGO SECURITIES

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**Jerome Brun**  
Head of Model Validation, Market Risk  
SOCIÉTÉ GÉNÉRALE

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### London

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**Peter Whitehead**  
Director, Group Valuation Oversight  
DEUTSCHE BANK

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**Pierpaolo Montana**  
Head of Model Validation  
WEST LB

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**Dr Carsten Wehn**  
Head of Market Risk Control  
DEKABANK

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**Moises Gerstein**  
Credit Model Validation  
ING BANK

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**Peter Dobransky**  
Head of Risk Model Validation  
BNP PARIBAS

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**Sanja Hukovic**  
Head of EMEA Model Review  
UBS

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**Steve McCarthy**  
Head of Model Validation,  
NATIONAL AUSTRALIA BANK

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**Colin Mason**  
Head of Front Office Pricing Validation  
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London 16 & 17 September 2010  
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New York 20 & 21 September 2010  
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## New York Wednesday 13 October, 2010

Day

1



0830	Registration and coffee
0900	<p><b>An overview of model risk: a practitioners perspective</b></p> <ul style="list-style-type: none"> <li>- Historical development of model validation</li> <li>- Late 1980's – early 1990's: uncertain beginnings</li> <li>- Mid 1990's: Pioneering quants press on</li> <li>- Late 1990's: the concept begins to take hold</li> <li>- Post 9/11: enter the regulators</li> <li>- 2005 – 2008: model validation comes of age</li> <li>- Post 2008: global financial meltdown</li> <li>- Case study: the agony and ecstasy of model validation</li> </ul> <p>Tutor <b>Jon Hill, Vice President, Head of Model Validation, Internal Audit Department, MORGAN STANLEY</b></p>
1030	Morning break
1100	<p><b>Model development and the model management framework at KBC</b></p> <ul style="list-style-type: none"> <li>- Perspectives on model development</li> <li>- Objectives of a model management framework</li> <li>- Our initial implementation of a model management framework</li> <li>- Case studies from structured finance, asset management, and proprietary trading</li> <li>- Updates to the model management framework</li> <li>- Current challenges: <ul style="list-style-type: none"> <li>- Comprehensive risk model development</li> <li>- Validation for bespoke tranches</li> </ul> </li> </ul> <p>Tutor <b>Craig Wotherspoon, Head of Model Validation, KBC FINANCIAL PRODUCTS</b></p>
1230	Lunch

1330	<p><b>Validating market risk models: a practical approach</b></p> <ul style="list-style-type: none"> <li>- Market risk models: general, specific, incremental risk charge</li> <li>- Market risk model components</li> <li>- Validation of model components</li> <li>- Risk factor identification and distributions</li> <li>- Regulatory requirements</li> <li>- Performance monitoring and backtesting procedures</li> </ul> <p>Tutor <b>Douglas Gardner, Managing Director, Head of Model Validation, WELLS FARGO SECURITIES</b></p>
1500	Afternoon break
1530	<p><b>Validating credit risk models: a practical approach</b></p> <ul style="list-style-type: none"> <li>- The general framework for counterparty credit risk at the enterprise level <ul style="list-style-type: none"> <li>- Structural models</li> <li>- Reduced form models</li> </ul> </li> <li>- The advantages and disadvantages of each types of models</li> <li>- Structural models in a simple example <ul style="list-style-type: none"> <li>- The main inputs: PD, LGD, EAD, asset correlation, etc</li> <li>- The estimation of the main inputs</li> </ul> </li> <li>- Case study: validation of a credit risk model <ul style="list-style-type: none"> <li>- The validation of the framework</li> <li>- The validation of estimation methods for inputs</li> <li>- Model performance test</li> <li>- Stress testing</li> </ul> </li> </ul> <p>Tutor <b>Xiaozhong Liang, Vice President, Model Validation, STATE STREET CORPORATION</b></p>
1700	End of day one

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## New York Thursday 14 October, 2010

Day

2



0830	Registration and coffee
0900	<p><b>Validation of internal models required by regulators</b></p> <ul style="list-style-type: none"> <li>- Internal models for market risk : the old and the new</li> <li>- Focus on the new internal models for market risk on the trading book</li> <li>- Internal models vs. valuation/risk-management models</li> <li>- Risk-driven internal models : the use test</li> </ul> <p>Tutor <b>Jerome Brun, Head of Model Validation, Market Risk, SOCIÉTÉ GÉNÉRALE</b></p>
10.30	Morning break
1100	<p><b>Model risk and its presence in FX derivatives</b></p> <ul style="list-style-type: none"> <li>- Model risk and risk management</li> <li>- Time scales and models</li> <li>- Liquidity model limitations</li> <li>- Which model should we use?</li> <li>- Model risk, model reserves, and bid-offer spreads</li> <li>- Models and Parameters</li> <li>- Model quality assurance validation and model risk</li> <li>- Goals and procedures for model quality assurance validation</li> <li>- Case studies: FX derivatives</li> </ul> <p>Tutor <b>Jan Dash, President, J. DASH CONSULTANTS LLC</b></p>
1230	Lunch
1330	<p><b>Validation of credit default swaps (CDS)</b></p> <ul style="list-style-type: none"> <li>- Overview of standard model - JP Morgan</li> <li>- Inputs to the model: yield curves, credit spread curve and recovery rate</li> <li>- Good profit and loss examined:</li> </ul>

	<ul style="list-style-type: none"> <li>- Theta</li> <li>- Par rate delta</li> <li>- Credit delta</li> <li>- Credit gamma</li> <li>- Recovery delta</li> <li>- Recovery gamma</li> <li>- Cost of funding</li> <li>- Cost of tenor sensitivity</li> <li>- Risk sensitivity should be given in terms of market observable CDS</li> <li>- Review of new CDS ISDA trading conventions</li> </ul> <p>Tutor <b>Sanja Hukovic, Head of EMEA Model Review, UBS</b></p>
1500	Afternoon break
1530	<p><b>Model validation for equity derivatives</b></p> <ul style="list-style-type: none"> <li>- Regulatory mandates and guidance</li> <li>- Model validation and model risk for equity derivatives: various views and goals</li> <li>- Approaches to model validation for equity derivatives</li> <li>- Review of model theory and modeling approaches <ul style="list-style-type: none"> <li>- Model implementation, reviews and tests</li> <li>- Process and (Input) data reviews</li> <li>- Reviews of actual model use and purpose</li> <li>- Benchmark against other modeling and implementation choices</li> <li>- Testing environments for pricing systems, validations, and benchmarking</li> <li>- Example case study</li> </ul> </li> </ul> <p>Tutor <b>Bernhard Hientzsch, Director, SIG Model Validation &amp; Approval, WELLS FARGO SECURITIES</b></p>
1700	End of the course

## London Monday 18 October, 2010

Day

1



0830	Registration and coffee
0900	<p><b>An overview of model risk: a practitioners perspective</b></p> <ul style="list-style-type: none"> <li>- Model risk and the credit crisis</li> <li>- The market standard model</li> <li>- The evolution of models and model risk</li> <li>- Sources of model risk</li> <li>- Model validation: the traditional approach to model risk</li> <li>- Modern model risk and the product- model-calibration paradigm</li> <li>- The calibration debate</li> </ul> <p>Tutor <b>Peter Whitehead, Director, Group Valuation Oversight, DEUTSCHE BANK</b></p>
1030	Morning break
1100	<p><b>Developing an enterprise wide model risk management framework</b></p> <ul style="list-style-type: none"> <li>- Market incompleteness and model risk</li> <li>- Model risk through the life cycle</li> <li>- Model risk and model adjustments</li> <li>- Model risk and other risks integration</li> <li>- Model risk management frameworks</li> </ul> <p>Tutor <b>Pierpaolo Montana, Head of Model Validation, WEST LB</b></p>
1230	Lunch

1330	<p><b>A practical approach to validating market risk models</b></p> <ul style="list-style-type: none"> <li>- Identifying the building blocks for the market risk model</li> <li>- Impact of different modelling assumptions</li> <li>- How does model risk in a risk model affect the risk management process?</li> <li>- Tools for assessing the adequacy of the individual building blocks in market risk models</li> <li>- Introduction and comparison of different backtesting procedures</li> <li>- Regulatory requirements for backtesting market risk models</li> <li>- Approaches to take into account model risk for a market risk model</li> <li>- Application in practise, regular validation processes and its potential effects</li> <li>- Incorporation of backtesting results in market risk management</li> </ul> <p>Tutor <b>Dr Carsten Wehn, Head of Market Risk Control, DEKABANK</b></p>
1500	Afternoon break
1530	<p><b>Counterparty credit risk: validating credit value adjustment models</b></p> <ul style="list-style-type: none"> <li>- Defining CVA in the context of model validation</li> <li>- CVA and lessons learnt from the credit crisis</li> <li>- CVA as a heavy model dependant concept</li> <li>- Quantitative and modelling issues behind CVA</li> <li>- How to validate CVA: <ul style="list-style-type: none"> <li>- Pricing validation</li> <li>- Monte Carlo techniques validation</li> <li>- Numerical issues within CVA</li> <li>- Sensitivities – American Monte Carlo</li> <li>- Wrong-way risk – correlation matters</li> <li>- CVA and its funding ramifications</li> </ul> </li> </ul> <p>Tutor <b>Moises Gerstein, Credit Model Validation, ING BANK</b></p>
1700	End of day one

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## London Tuesday 19 October, 2010

Day

2



0830	Registration and coffee
0900	<p><b>Validation of stochastic volatility models in FX options</b></p> <ul style="list-style-type: none"> <li>- Validation of multi-factor stochastic volatility and stochastic skew models</li> <li>- Model implications and limitations - where models may go wrong</li> <li>- Benchmarking using alternative models</li> <li>- Model selection and calibration with intuition</li> <li>- Using scenario analysis to validate models</li> <li>- Parameter sensitivity, limits and model reserves</li> <li>- Dynamics - the link between model, market and counterparty risks</li> </ul> <p>Tutor <b>Peter Dobranszky, Head of Risk Model Validation, BNP PARIBAS</b></p>
1030	Morning break
1100	<p><b>Validation of credit default swaps (CDS)</b></p> <ul style="list-style-type: none"> <li>- Overview of standard model - JP Morgan</li> <li>- Inputs to the model: yield curves, credit spread curve and recovery rate</li> <li>- Good profit and loss examined: <ul style="list-style-type: none"> <li>- Theta</li> <li>- Par rate delta</li> <li>- Credit delta</li> <li>- Credit gamma</li> <li>- Recovery delta</li> <li>- Recovery gamma</li> <li>- Cost of funding</li> <li>- Cost of tenor sensitivity</li> </ul> </li> <li>- Risk sensitivity should be given in terms of market observable CDS</li> <li>- Review of new CDS ISDA trading conventions</li> </ul> <p>Tutor <b>Sanja Hukovic, Head of EMEA Model Review, UBS</b></p>

1230	Lunch
1330	<p><b>A risk practitioner's guide to validating interest rate models</b></p> <ul style="list-style-type: none"> <li>- Model validation methods for interest rate models</li> <li>- Case study: the approach within National Australia Bank</li> <li>- Market dislocation and its impact on model validity</li> <li>- End-to-end model relevance: from pricing to capital management</li> </ul> <p>Tutor <b>Steve McCarthy, Head of Model Validation, NATIONAL AUSTRALIA BANK</b></p>
1500	Afternoon break
1530	<p><b>Model validation of equity derivatives: equity volatility products</b></p> <ul style="list-style-type: none"> <li>- Why 2008 made us look quickly again at model assumptions in equity derivatives</li> <li>- New products and the re-emergence of the volatility swap</li> <li>- The zoology of higher order volatility risks - is it fish or fowl or neither?</li> <li>- Approval and control processes - are we doing too much and too little at the same time?</li> </ul> <p>Tutor <b>Colin Mason, Head of Front Office Pricing Validation, CREDIT SUISSE</b></p>
1700	End of the course

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