"Models are never perfect, it is important to assess and quantify the validity of the models themselves"

Raising Standards for Model Validation Practises

training

Preparing for the next wave of regulatory changes and demonstrating best practice in managing and measuring model risk

20th – 21st November 2014
London, UK

27th – 28th November 2014
Stockholm, Sweden

Your Expert Trainer

Dr. Alex Canavezes
the principal consultant and founder
Quant Analytics

Key Benefits Include

- Limited spaces on a first come, first accepted basis
- Pre-course questionnaire to establish your individual and business concerns
- Sessions are supported with several case studies to ensure delegates gain a practical understanding
- Comprehensive take-away course documentation

"The seminar was very good. Very informative discussion and questions from attendees"
Texas Capital Bank

"Very good event bringing a very impressive group of experts"
Scotiabank

"A great event for practitioners"
Citigroup

"Comprehensive and well structured programme with an open and engaging style of presentation."
Investec

"The course has been a positive experience which will definitely help my group in their day-to-day activities."
Edison Trading

Programme

Day One

Introduction to Model Risk
- What is model risk?
- Why is model risk management important?
- How can we mitigate model risk?
- How can model risk be quantified?

Models in general and their usage
- Valuation models
- Credit risk models
- VaR models
- Data validation models
- Assumptions and limitations of models

Thoughtful model construction
- Minimising risk through sound development
- Journey of a well implemented model
- Managing model risk in the development stage
- Calibration to observed data

Performing robust testing
- The importance of testing
- Sensitivity analysis: Stress testing
- Performance measurement: Back testing

A guide to Validation
- Best practises for validating quantitative models
- The challenge of validating risk models
- Challenges encountered in validating credit risk rating models

Case study in validation of pricing model
- SABR model (Stochastic alpha beta rho) of forward interest rates
- Calibration of the model to observed prices of caplets
- Construction of a Monte Carlo engine to generate generic paths
- Using the Monte Carlo engine to price an exotic option
- Back testing the model using the observed prices
- Identify the periods the model performance is sub-optimal

Case study in VaR model
- The influence of historical price moves on the implementation of the VaR model
- Calculating the sensitivities of the portfolio to specific pre-determined risk factors
- Using the observed historical movements of the various factors and the sensitivities to generate a distribution of price moves for the portfolio
- Calculate the appropriate quantile (e.g. the 1st percentile)
- (Stress) test the model using different windows for the historical simulation
- Analyse the effect of missing data on model risk

Day Two

Hedges
- Modelling hedges

Case study in Portfolio risk
- Principle component analysis
- Identifying the largest risk factors affecting a given portfolio
- How can we hedge a portfolio of interest rate swaps using PCA and a few hedging instruments?
- Using historical data to test the goodness of the hedging solution in a variety of situations

Data
- Data quality measures
- Impact of data quality on model risk
- Avoiding the pitfalls of data mining

Case study in methodology framework for detecting suspicious data points
- Construct distribution of price moves using previously validated historical data
- Scale the distribution of moves by an estimate of the local volatili+ty
- Assess the validity of a new data point by comparing it to the distribution of scaled moves

Model management and governance
- Quality control framework: Re-calibration
- Is the math right?
- Is it the right math?
- How is the model governed?

Regulatory changes
- Impact of regulatory changes on model risk
- Best practises for complying to regulations
- Risk measurement and reporting

marcusevans financial markets training

Register Now:
Contact the **marcus evans** Training Division:
Nick Cook, Tel.: **+44 (0) 203 0023151**
Email: NickCo@marcusevansuk.com

the course

This course is about the mathematical models used in financial institutions. Models are used everyday as a fundamental part of a bank's operations, in order to price instruments, quantify the risk of products and portfolios, and assess the quality of the data used.

Models are never perfect. In line with recent regulatory changes, it is important to assess and quantify the validity of the models themselves.

The objective of this course is to bring the practitioner face to face with the various types of models and their inherent risks, assumptions and limitations. This is a hands-on, two day interactive course aimed for a technical audience working in the financial sector. It will therefore be an essential course for anyone in the financial markets who needs to understand model risk and how it relates to investment banking or insurance strategy. The course will be an interactive two day challenge aimed at risk specialists and quantitative analysts.

Clients who have benefited from **marcus evans** financial training courses include

Bank of America, Citi, JP Morgan, SunTrust, PNC, BOK Financial, Bank of Oklahoma, Federal Home Loan Bank of New York, Morgan Stanley, Bank of the Cascades, Fifth Third Bank, Capital One, State Street, RBS Citizens Bank, Wells Fargo, Union Bank, Bank of the West, Royal Bank of Canada, TD Bank, Scotiabank, KeyBank and Sovereign Bank

how will you benefit?

- The ability to recognize the need for models, be it pricing models, risk models or other models
- Be able to apply specific models in a variety of situations
- Identify the assumptions and limitations inherent to each model
- Quantify data quality and assess its impact on the validity of models
- Identify the challenges posed by the ever changing regulatory framework

who should attend?

From Investment Banks, Financial Service Providers, Asset Managers, Brokerage Firms, Hedge Funds, Consultancies and Solution Providers:Managers, Advisors and Market Practitioners in:

- Pricing Model Validation
- Model Validation
- Model Review
- Validation and Valuation
- Validation Oversight
- Validation Group
- Model Risk
- Model Control
- Model Oversight
- Quantitative Analysis
- Internal Audits

about...

about your expert trainer

Dr. Alex Canavezes is the principal consultant and founder of Quant Analytics. Dr. Canavezes offers financial solutions ranging from risk management to derivatives modelling and litigation advisory. Clients include investment banks, regulators, hedge funds and law firms. Recent engagements include redesigning the methodology framework for data treatment to be implemented across Credit Suisse and providing an expert opinion on rating credit derivatives for a law firm.

Alex has more than 9 years of experience providing quantitative solutions to both corporates and financial institutions. His expertise includes pricing complex structured products encompassing all asset classes; asset – liability modelling of large pension funds; design, pricing and marketing of variable annuity guarantees for insurance and re - insurance companies; optimisation of debt composition for corporations, advising investment banks undergoing litigation and providing risk management solutions and VaR models. Alex holds a PhD in astrophysics from Imperial College, London and a Certificate of Advanced Study in Mathematics from the University of Cambridge. He has lectured structure formation in the Universe, astrophysics and cosmology at various universities including the University of Cambridge, UK, the University of Porto, Portugal and the Universities of Strasbourg and Toulouse, France.

marcus evans financial markets training

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Training courses are being offered on a world-wide basis from our production offices across Europe, the US, Australia and the Asia Pacific region. This international network affords a global view of emerging training needs
in the most dynamic industries.

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