

## CREDIT RISK MODELLING

*A Comprehensive Comparison Between Basel Requirements and IFRS9 Standards*

**2<sup>nd</sup> - 4<sup>th</sup> December 2019, Kuala Lumpur**

### COURSE OUTCOMES

- Elevating knowledge of modelling and corresponding hands-on R software development
- Overcoming the effects of financial volatility and compliance issues in line with the latest financial reporting standards in comparison with Basel Capital requirements under Advanced Internal Rating Based (IRB) modelling
- Grasping the latest regulation changes and developments to avoid unnecessary financial costs and falling foul of financial compliance standards
- Working knowledge of Basel IRB and lifetime Probability of Default (PD) modelling based on Generalized Linear Modelling (GLM) and survival analysis based on R implementation capability
- Upgrading key areas of Exposure at Default (EAD) modelling techniques for wholesale as well as retail products
- Getting familiar with key aspects of the Loss Given Default (LGD) structural modelling technique and a better understanding of regression modelling (e.g. Tobit regression)
- Staging allocation process and practical implementation
- Attaining a strong grasp and understanding of Expected Credit Loss (ECL) validation techniques and computational mechanisms
- Comprehensive knowledge of the calibration process by comparing Basel IRB and IFRS requirements

# AGENDA

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## Day One

08:30 – 09:00

### Registration and Coffee

09:00 – 10:30

### Session One: Breaking Down the Key Components and Framework of IFRS 9 and Comparison with Basel IRB

- Course overview
- Introduction to IFRS9 and Basel IRB
- Uncovering and getting familiar with key modelling areas:
  - Probability of Default (PD)
  - Loss Given Default (LGD)
  - Exposure at Default (EAD)
- Staging allocation
- Expected Credit Loss (ECL) computation

10:30 – 11:00

### Tea Break

11:00 – 12:30

### Session Two: Implementing a Comprehensive One - Year PD Modelling Framework for IFRS and Basel IRB

- Scorecard modelling
- Crunching the numbers: The Mathematics of Generalized Linear Model (GLM regression)
- Utilizing alternative approaches to deal with low default portfolios
- Validating one - year PD models

12:30 – 14:00

### Lunch

14:00 – 15:30

### Session Three: Assessing and Improving Scorecard Modelling in R

- Knowing the fundamentals: What does modelling in R mean?
- Data wrangling in R
- Creating a scorecard database in R
- Breaking down the core elements of scorecard modelling:
  - From long list to short list
  - Stepwise regression
  - Scorecard validation

15:30 – 16:00

### Tea Break

16:00 – 17:00

### Session Four: Transitioning From Scorecards to PDs

- Conducting a comparison between point-in-time versus through-the-cycle modelling
- Calibrating PDs the right way: What is missing?
- Low default portfolio modelling

## Day Two

08:30 – 09:00

### Registration and Coffee

09:00 – 10:30

### Session One: Upgrading the Lifetime PD Model Development

- Creating the default flag through time
- Positioning and modelling the relationship with macroeconomic variables
- Improving scenario analysis and PD stress testing
- Devising strategies to deal with low default portfolios

10:30 – 11:00

### Tea Break

11:00 – 12:30

### Session Two: Assessing Risk Factors and Rate of Failure Using the Survival Analysis Framework

- Developing Accelerated Failure Time (AFT) models
- Cox Proportional - Hazard (PH) model
- Prioritising time varying covariates: Macroeconomic variables, ageing, etc...
- Validating your survival analysis:
  - Do changes need to be made?
  - What is lacking?

12:30 – 14:00

### Lunch

14:00 – 15:30

### Session 3: Limiting Loss and Liabilities: Introduction to EAD Modelling

- Setting the timeframe for one-year EAD modelling
- Lifetime amortizing profiles
- Behavioural modelling: Prepayments and overpayments
- Conducting a case study in R
- EAD modelling validation: Do the results fit the expectations?

15:30 – 16:00

### Tea Break

16:00 – 17:00

### Session Four: Building an Effective Framework for LGD Modelling

- Structural modelling
- Estimating linear relationships using the Tobit regression
- Dealing with data scarcity
- How can you model stage 3 LGDs?

## Day Three

08:30 – 09:00

### Registration and Coffee

09:00 – 10:30

#### Session One: Deep Dive: Case study on LGD Modelling in R

- Creating an LGD database
- Calculating the probability of cure (probability of possession) and severity (or loss given loss)
- Synchronizing the right relationship with macroeconomic variables
- LGD for low default portfolios
- LGD validation

10:30 – 11:00

### Tea Break

11:00 – 12:30

#### Session Two: Staging Allocation and Macroeconomic Scenarios

- Providing alternative approaches to identify significant increase in credit risk
- Dealing with a lack of data:
  - At origination
  - At reporting date
- How to enrich macroeconomic scenarios for greater financial profitability?
- Exploring the different role of scenarios for staging allocation

12:30 – 14:00

### Lunch

14:00 – 15:30

#### Session Three: Computing Expected Credit Loss (ECL)

- Factoring and combining all the relevant components together
- Devising a robust sensitivity analysis test for:
  - PD, LGD, EAD estimates
  - Scenario testing
  - Staging criteria

15:30 – 16:00

### Tea Break

16:00 – 17:00

#### Session Four: Identifying the Right Methods to Validate ECL

- Ensuring consistency of parameters over a lifetime horizon
- Drawing ECL theoretical boundaries
- ECL historical validation

## Who Should Attend

- Financial Directors and Chief Financial Officers (CFO)
- Internal/External Audit & Compliance
- Credit Risk Analyst
- Credit Risk Modeller
- Financial Controllers/Heads of Corporate Reporting
- Chief/Senior Accountant
- Management Accountant
- Chartered Accountant
- Financial Reporting/Financial Compliance/Regulatory Reporting Officer
- Head of Treasury
- Financial and Information Systems Managers

## SPEAKER

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**Dr Tiziano Bellini**  
*PhD*  
*(Statistics)*

- Worked in risk management and finance across Europe, London and New York for the past 20 years.
- Experience include Barclays Investment Bank, EY Financial Advisory Services in London, HSBC headquarter, Prometeia and other global leading companies.
- Guest lecturer at the London School of Economics and Political Science, Imperial College of London.
- Doctorate in statistics from University of Milan and London School of Economics and Political Science.
- Authored the books "Stress Testing and Risk integration in Banks: a Statistical Framework and Practical Software guide in Matlab and R", "IFRS 9 and CECL Credit Risk Modelling and Validation: A Practical Guide with Examples Worked in R and SAS".
- Authored papers published in European Journal of Operational Research (EJOR), Computational Statistics and Data Analysis (CSDA) and other top reviewed Journals.
- Referees of Journal of Banking and Finance (Elsevier), European Journal of Operational Research (EJOR), Journal of Applied Statistics (Taylor & Francis), Journal of Risk, and other top Journals.
- Trainer in risk management and statistics, he is also a Qualified Chartered Accountant and Registered Auditor.

## Why You Should Attend

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### **What are some of the biggest challenges in implementing IFRS policies from a practical standpoint?**

Do not miss out and attend this highly interactive, practical and exclusive 2-day seminar to equip yourself with the right skills needed to not only reduce your cost of financial reporting and liabilities but help provide accurate and timely information to investors which can be used for making crucial investment decisions. Delegates will experience a rich classroom-type experience with a detailed analysis of the most recent updates to IFRS standards compared against Basel IRB requirements affecting you and the international marketplace.

A hands-on approach is followed by providing both the theoretical and practical toolkit to use on a day-by-day basis. The open-source statistical software R paves the way for grasping all details required to create customized analysis frameworks. This software is used to facilitate the overall understanding of both model development and validation. It provides a good grasp that can also be used as a challenger or for integration for software already used by a financial institution.

During the first day, the key instruments used for modelling are explored. A wide use of the software R characterizes the course from the very beginning. In day one, the emphasis is on developing point-in-time Probability of Default (PD). An extensive interaction with R paves the way for the next two-day program. As above mentioned, this software can also be considered as a 'training' tool for better understanding or challenging existing software adopted by the financial institution.

The focus of the second day is to expand the time horizon to encompass the entire lifetime. On this, generalized linear models together with survival analysis are investigated for deriving lifetime PD curves. As during the first day, a specific attention is devoted to the so-called low default portfolios. Then, the focus shifts towards Exposure at Default (EAD) modelling. Specific attention is devoted to behavioral modelling. During the last part of day two, the key concepts around loss given default (LGD) are presented.

The third day connects the key ingredients to estimate the Expected Credit Losses (ECLs). Scenario analysis together with staging allocation are at the very heart of the IFRS9 requirements. On this, a hands-on perspective is followed in an attempt to bring to common factor the most relevant experiences among different countries. The last part of day three points out the key issue one needs to bear in mind when implementing an IFRS9 framework. Attention is devoted both to managerial as well as the audit perspectives.

# CREDIT RISK MODELLING

2<sup>nd</sup> - 4<sup>th</sup> December 2019, Kuala Lumpur

## BOOKING DETAILS

I am booking:	Price per Delegate	Total Price	Early Bird (10% Discount)
<input type="checkbox"/> 1 delegate	RM5,999	<b>RM5,999</b>	RM5,399
<input type="checkbox"/> 2 delegates (5% Discount)	RM5,699	<b>RM11,398</b>	RM10,258
<input type="checkbox"/> 3 delegates (15% Discount)	RM5,099	<b>RM15,297</b>	RM13,768
<input type="checkbox"/> 4 delegates (20% Discount)	RM4,799	<b>RM19,197</b>	RM17,277
<input type="checkbox"/> 5 delegates (30% Discount)	RM4,199	<b>RM20,997</b>	RM18,897

\* Further attractive packages are available for groups of more than five. Please contact us directly.

**Online training option:** I would like to also enrol for the online course, **Shariah Risk & Governance Framework for Islamic Financial Institutions** for the special price of RM200 per user. Please tick here

### Available Discounts

**Early Bird:** Registrations received on or before 1<sup>st</sup> November 2019, will receive a 10% discount. No discount shall be given to registrations received after this cut-off date.

**Discount for Active Subscribers of Islamic Finance news:** If the delegate is a current IFN subscriber, he/she shall receive a flat 10% discount from the normal fee. Please tick here

**Loyalty Program:** 25% discount on other seminars attended within a 6-month period and non-transferrable. Please tick here

## DELEGATE DETAILS

Name	Job Title	Email address	Telephone
1 _____	/ _____	/ _____	/ _____
2 _____	/ _____	/ _____	/ _____
3 _____	/ _____	/ _____	/ _____
4 _____	/ _____	/ _____	/ _____
5 _____	/ _____	/ _____	/ _____

## WHO TO INVOICE AND CONTACT?

Please tell us who we should invoice. It is also helpful for us to have the name of an administrator with whom we can liaise directly.

Contact person for invoicing: \_\_\_\_\_ Job Title: \_\_\_\_\_  
Email: \_\_\_\_\_ Tel: \_\_\_\_\_ Fax: \_\_\_\_\_  
Billing Address: \_\_\_\_\_ Original Invoice for Courier: YES  / NO   
Contact person to send administration details: \_\_\_\_\_  
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Authorizing signature \_\_\_\_\_ (mandatory)

Yes, I have read and understood the booking and cancellation policy below.

## SEND US YOUR REGISTRATION!

By email: [seminars@redmoneygroup.com](mailto:seminars@redmoneygroup.com) By fax: +603 2162 7810

You may also book online at <http://www.REDmoneyevents.com>

Please call us on: +603 2162 7800 or +603 2162 7802 if you require assistance.

Our address is: REDmoney, Suite 22-06, 22<sup>nd</sup> Floor, Menara Tan & Tan, 207, Jalan Tun Razak, 50400 Kuala Lumpur

### Booking, Payment and Cancellation Policy – important, please read carefully

By completing, signing and sending us this registration form you are confirming delegate places on the seminar. You are also confirming your understanding of our Booking, Payment and Cancellation Policy.

**Cancellation:** If delegates cannot attend the seminar replacement participants are always welcome. Otherwise delegates must request in writing (letter, fax or email) to cancel registration/s or transfer to a different seminar at least 21 days before the seminar start date to be eligible for a refund, less a 5% administration fee. Delegates who cancel within 21 days of the seminar start date, or who do not attend, are liable to pay the full seminar fee and no refunds will be given. Instead fees will be converted to a IFN Seminars voucher equivalent to the original fee, less a 15% administration charge. This voucher is transferable within your organization and must be redeemed within one year of issue or become void. If a seminar is postponed for whatever reason delegate bookings will be automatically transferred to the new seminar date. Delegates who wish to transfer to a different seminar will be subject to the same terms as above and charged the difference in seminar fees. No refunds or seminar vouchers will be issued for a no-show.

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Seminar Venue: Full details of the venue will be sent to you upon registration.

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