

## **COMPREHENSIVE BALANCE SHEET STRESS TESTING: Hands-on Masterclass with MS-Excel & R**

**24<sup>th</sup> - 26<sup>th</sup> September 2018, KUALA LUMPUR**

Bank Negara Malaysia published three documents on stress testing to reinforce the importance of stress testing. However, it is the sole responsibility of financial institutions to determine their own strategies, to design and develop stress testing methods that fit their business environment and profile.

The challenge in stress testing is that it needs deep knowledge in quantitative analysis, risk modelling and also technical acumen on statistical packages. REDmoney has designed a course to address this challenge by providing attendees with detailed understanding on stress testing from both theoretical as well as applied views. A rigorous hands-on training is followed throughout the course. The use of Excel and R provides a comprehensive framework to be directly used on a day-by-day basis.

### **KEY HIGHLIGHTS**

- Appreciate how stress testing can serve uses beyond the regulatory requirements and improve the decision making within the organization
- Learn how to model a full business under stress
- Spot how poorly constructed models lead to inaccurate and potentially fatal results
- Understand how to mitigate some of the unique challenges of stress modelling
- Review practical case studies highlighting best practice approaches to stress modelling

During the first day, macroeconomic scenarios are investigated from both an economic as well as time series (statistical) perspectives. Margin at risk and liquidity stress testing are explored through the lenses of the traditional asset and liability management framework. Case studies help consolidating the broader understanding of the key issues risk managers need to face.

A deep dive into credit risk analysis characterizes the second day. An introduction to portfolio credit risk modelling is followed by the exam of the relationships with Advanced Internal Rating Based (AIRB) modelling. Links between credit risk parameters and macroeconomic variables are studied through a series of case studies. Balance sheet is then explored both in terms of asset and liability stress testing projections as well as from a profit and loss viewpoint. On the latter, the focus is on pre-provision net revenues and credit loss projections.

During the third day, the regulatory capital analysis is conducted under stress. All key topics studied during day one and two are put into practice in order to assess the impact of adverse macroeconomic conditions on a Bank. Risk integration and reverse stress testing are finally studied as a key element of a comprehensive risk assessment process to be used both for managerial purposes as well as into the internal capital adequacy assessment process (ICAAP).

# AGENDA

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## DAY 1

**9.00am – 10.30am**

### Session 1: Introduction to macroeconomic analysis

- Course overview
- Macroeconomic scenario analysis

**10.30am – 11.00am** Coffee

**11.00am – 12.30pm**

### Session 2: Time series analysis for stress testing

- Hints on Vector Auto-Regression (VAR) and Global Vector Auto-Regression (GVAR) modelling
- Macroeconomic scenario analysis in R

**12.30pm – 2.00pm** Lunch

**2.00pm – 3.30pm**

### Session 3: Margin at risk stress testing

- Asset and liability management gap analysis
- Net interest income (NII) analysis
- Behavioural modelling in R
- Case study: stress test on NII behavioural modelling

**3.30pm – 4.00pm** Coffee

**4.00pm – 5.30pm**

### Session 4: Liquidity risk stress testing

- Managerial approach
- Liquidity coverage ratio (LCR)
- Net stable funding ratio (NSFR)
- Case study: stress test on LCR and NSFR

## DAY 2

**9.00am – 10.30am**

### Session 5: Portfolio credit risk modelling

- Credit Metrics
- Credit portfolio modelling with copulas

**10.30am – 11.00am** Coffee

**11.00am – 12.30pm**

### Session 6: From portfolio credit modelling to advanced internal rating based formula

- Risk weighted asset analysis: standardized and advanced approaches
- Case study: credit portfolio modelling and RWA in R

**12.30pm – 2.00pm** Lunch

**2.00pm – 3.30pm**

### Session 7: Credit risk stress testing

- How to link credit risk parameters and macroeconomic variables
- Case study: credit risk stress testing

**3.30pm – 4.00pm** Coffee

**4.00pm – 5.30pm**

### Session 8: Balance sheet management stress testing

- Balance sheet projections
- Profit and loss projections
- Case study: balance sheet stress testing

## DAY 3

**9.00am – 10.30am**

### Session 9: Regulatory capital and RWA stress testing

- Regulatory capital analysis
- RWA aggregation
- Case study: capital ratios stress testing

**10.30am – 11.00am** Coffee

**11.00am – 12.30pm**

### Session 10: Risk integration

- Top down risk integration modelling
- Bottom-up modelling

**12.30pm – 2.00pm** Lunch

**2.00pm – 3.30pm**

### Session 11: Economic capital and liquidity integration

- Case study: economic capital and liquidity integration in R

**3.30pm – 4.00pm** Coffee

**4.00pm – 5.30pm**

### Session 12: Reverse stress testing

- Reverse stress testing objective function
- Vulnerability thresholds
- Bank specific event causing bankruptcy
- Macroeconomic scenarios causing a bank's failure
- Case study: what if analysis for reverse stress testing

## 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 EY Financial Advisory Services in London, HSBC headquarter, Prometeia and other global leading companies.
- Guest lecturer at the London School of Economics, Imperial College of London, University of Passau in Germany.
- Doctorate in statistics from University of Milan and London School of Economics.
- Authored the book "Stress Testing and Risk integration in Banks: a Statistical Framework and Practical Software guide in Matlab and R"
- 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) and Journal of Applied Statistics (Taylor & Francis) and other top Journals.
- Trainer in risk management and statistics, he is also a Chartered Public accountant and Tax Expert.

### Who Will Benefit?

- Stress testing team
- Risk managers
- Treasury / asset liability committee
- Risk modelling team
- Quantitative analyst
- Capital management team
- Model validation team
- Portfolio managers

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### Associate Partner:

RM 17,500

- Logo on all promotional activities
- 5 invitations for your colleagues and clients
- 25% discount on any additional delegate places
- Full coverage on the Seminar website including biography and hyperlinked logo
- Branding throughout the Seminar: Seminar Guide Cover, Buntings,
- Table-top space in the breakout area during the Seminar
- Guaranteed prime session participation
- One exclusive seat-drop during the Seminar
- Full delegate list within one week post Seminar
- Post-Seminar questionnaire results

### Partner:

RM 12,500

- Logo on all promotional activities
- 2 invitations for your colleagues and clients
- Coverage on the Seminar website including biography and hyperlinked logo
- Guaranteed session participation
- Branding throughout the Seminar: Seminar Guide Cover, Buntings,
- Table-top space in the breakout area during the Seminar
- Delegate list within one week post Seminar
- Post-Seminar questionnaire results

The sponsor / Delegate will arrange for the payment in one installation of RM \_\_\_\_\_ exclusive of all taxes to REDmoney, within 14 days of invoice or before the event taking place (whichever is sooner).

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## BOOKING DETAILS

I am booking:	Price per Delegate	Total Price	Early Bird (10% Discount)
<input type="checkbox"/> 1 delegate	RM5,500	<b>RM5,500</b>	<b>RM4,950</b>
<input type="checkbox"/> 2 delegates (5% Discount)	RM5,225	<b>RM10,450</b>	<b>RM9,405</b>
<input type="checkbox"/> 3 delegates (15% Discount)	RM4,675	<b>RM14,025</b>	<b>RM12,623</b>
<input type="checkbox"/> 4 delegates (20% Discount)	RM4,400	<b>RM17,600</b>	<b>RM15,840</b>
<input type="checkbox"/> 5 delegates (35% Discount)	RM3,575	<b>RM17,875</b>	<b>RM16,088</b>

\* Please note that prices do not include GST

\* 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 24<sup>th</sup> August 2018, 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: \_\_\_\_\_

Contact person to send administration details: \_\_\_\_\_

Job Title: \_\_\_\_\_ Email: \_\_\_\_\_ Tel: \_\_\_\_\_

Payment can be made by cheque or bank transfer. A notification will be sent to you once payment has been received.

I wish to pay by: Cheque/bankers draft  Telegraphic transfer  Credit Card

## APPROVING MANAGER

To process your registration we require the name and signature of a manager who is authorized by your organization to approve training expenditure.

Name: \_\_\_\_\_ Job Title: \_\_\_\_\_

Organization name: \_\_\_\_\_ Email: \_\_\_\_\_ Tel: \_\_\_\_\_

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.

**Payment Terms:** All seminars fees are to be received within 14 days of invoice date. REDmoney shall receive the full seminar fee with no deductions of any description. All telegraphic transfer fees, taxes and levies (domestic or otherwise) shall be borne by the sponsoring organization.

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

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