BASEL III & IV MASTERCLASS

2-day Course outline

13 CPD Points

The Basel accords address the way banks and financial institutions measure and manage their risks (operational, market, credit, liquidity, etc.) Basel I only addressed credit risk (later an amendment to Basel I included market risk). Basel II (still in force) revamped the measure and management of credit risk considerably, introduced operational risk and left market risk unchanged. Then the credit crisis happened, and Basel, wrongly, I believe, was amongst those institutions blamed for the disaster. Basel III was introduced to correct the failings of Basel II, but it (Basel III) is fundamentally a repair kit, not an entirely new accord. Then, additional changes were needed, so Basel IV came into being (again a repair kit, not a replacement for Basel II).

What are the rules governing regulatory risk capital, how are the interrelated and how and why did Basel accords develop the way they did? These and other relevant topics will be amongst those covered in this practical course which includes many Excel-based examples – often from first principles.

COURSE DESCRIPTION

This practical course offers insights into:

- Basel I - a brief overview of the big ideas, why was it necessary in the first place and what risks did it cover?
- Basel II - why was it necessary, what improvements and additions were made to the Basel I accord?
- Basel III - a patchwork of corrective measures designed to repair flaws detected in Basel II, not replace Basel II. What are the timings involved in the implementation, why are these staggered, what are the big changes and how do they affect bank capital?
- Basel IV - which introduces sweeping changes to the trading book. What are these changes? How will they affect bank capital and what is the timing involved?

METHODOLOGY

Classroom-type lectures and hands-on, practical workshop sessions using Microsoft Excel.

VALUE ADD

All aspects of the course will be reinforced using Microsoft Excel-based spreadsheets and models. Unique and exclusive pre-made spreadsheets will be provided to all delegates and explained to unlock their value.

KNOWLEDGE PRE-REQUISITES

- Working knowledge of Microsoft Excel
- A basic understanding of the Basel Accords is recommended
- Basic mathematical ability (no calculus) will be assumed and
- An appreciation of statistics (but none of the difficult stuff)

Note: All models are constructed using Microsoft's Excel.

LEARNING OBJECTIVES

At the end of the course participants will:

- understand the significance of credit risk as a major driver of potential bank instability
- be able to fit a distribution to these credit losses and estimate important parameters from these distributions such as expected loss, unexpected loss, correlation, etc.
- be able to extract default correlation from asset correlation and know the difference between these two important parameters into credit risk models
- understand the significance of correlation (default and asset) in the credit loss estimation process and how ignoring this parameter might have affected the outcome of the credit crunch
- appreciate the reasons behind the regulatory capital calculations (Basel II, III and IV)
- appreciate the corrections applied to BII by the introduction of the BIII accord
- know how to estimate the requisite parameters for the procyclical (BII) capital buffer and be able to model the long run mean for the countercyclical metric
- appreciate the origins of credit valuation adjustments (CVA), know why the calculation is fiendishly difficult and the regulatory (BIII) rules pertaining to CVA
- understand the significance of expected shortfall in the market loss estimation process
- know some mathematical procedures to estimate expected shortfall (non-trivial)
- know the background and details of all aspects of the new trading book regime introduced by Basel IV
- understand the changes to the standardised approach to credit risk and know – and be able to apply – the simpler operational risk approaches detailed in Basel IV
- be able to calculate expected shortfall whether historical or variance covariance VaR is used by the relevant institution
- be able to estimate the procyclical buffer parameter, λ for use in the HP filter approach to determine economic over-heating
- be able to calculate the leverage ratio
- determine, accurately, the quantity and quality of regulatory capital, and
- know and appreciate that the accords are living documents which are continuously evolving and adapting to the rapidly changing financial milieu.

WHO SHOULD ATTEND?

- Risk managers – market/credit/operational
- Regulatory and compliance staff
- Internal auditors

COURSE OUTLINE

DAY ONE

Credit and liquidity risk

- The regulatory view of credit risk measurement
- Evolution of Basel's approach to credit risk
- Basel I – the concept of risk weights
- Basel II – the introduction of the internal ratings-based approaches
- Why is it important to understand the IRB approach?
- Expected losses, unexpected losses
- Single factor model (ASRF)
- Importance of asset correlation

Exercise: Construction of a simple credit loss model using the ASRF model

- The Basel equations
- Why do Basel's equations (for the IRB approach) look the way they do?
- Maturity adjustment
- UL – EL and the 99.9th percentile loss
- Correlation – asset or default?
- The Vasicek distribution

Exercise: fitting a Vasicek distribution to credit loss data and understanding how useful this is to a credit risk manager from an economic capital perspective

- Importance of correlation parameter
- Loss estimation using the distribution

Exercises: construction of the Basel II IRB advanced approach equations in Excel and extracting default correlations from asset correlations – understanding the differences

- The credit crunch: what did we miss?
- Basel III
- Five major changes to the Basel II accord
- Timelines involved with the implementation of
- Liquidity, CVA & procyclicality rules

Exercise: assessing liquidity constraints introduced by Basel III

- Determining the procyclical metric relevant to any jurisdiction
- CVA calculations and regulatory capital rules
- Changes to the standardised approach to credit risk
- What are the changes?
- Why are they necessary?
- How will they change capital requirements?
- What is the magnitude of capital changes

DAY TWO

Market and operational risk

- Regulatory capital calculation for market risk
- What does the regulator say about VaR?
- The 1994 amendment to Basel I
- Overview of the old rules governing market risk in the trading book and why is VaR widely used
- The methods for calculating VaR
- The regulatory rules governing market risk capital (the traffic light system)
- What is IDR (incremental default risk) and why is it in the trading book?
- Stressed VaR

Exercises: full example of regulatory market risk capital including stressed VaR, IDR, etc.

- Regulatory capital calculation for market risk – Basel IV
- Why it's still important to know the above, even though BIV embraces ES, not VaR
- What are the rules governing market risk in the trading book
- Summary of Basel IV
- Revised standardised approach, general features and calibration

Exercise: Simple methodology to measure expected shortfall

- Regulatory capital calculation for market risk
- Revised models-based approach
- What are the other ways to measure expected shortfall?
- Gaussian/normal distribution assumptions
- Empirical (historical) methods

Exercise: construction of some more advanced ways to measure expected shortfall

- Changing correlation assumptions
- Why is diversification being frowned upon?
- How do changes to standardised correlation matrices affect VaR and ES?
- What do they achieve?

Exercise: construction of a regulatory capital set of calculations, incorporating all the changes introduced by Basel IV

- Strengthening boundary between trading/banking book
- Disclosure requirements
- Impact assessment, QIS, calibration
- Changes to simpler operational risk approaches
- Why are these necessary?
- How do they change operational risk capital requirements?

Exercise: estimating new capital requirements for the simplified operational risk regulations in Basel IV.