



FINANCIAL STABILITY INSTITUTE

BANK FOR INTERNATIONAL SETTLEMENTS

Advanced Risk Management:

Workshop for Reserve Managers organised by the FSI and BIS Banking Department

Beatenberg, Switzerland, 1-5 September 2003

Workshop objectives

In the first part of the workshop the characteristics and risks inherent in investing in corporate bonds and mortgage-backed securities will be examined. Mortgages and corporate bonds are two asset classes that are being increasingly considered by reserve managers as a means of enhancing portfolio returns, for this reason it is important that we fully understand their risk characteristics.

In the second part of the workshop we look at the necessary components of a framework for the management and control of market, credit and operational risk. We also describe how the BIS has incorporated these components into a risk management/control framework. Practical issues related to the various components of the framework will be analysed.

Agenda

Monday, 1 September 2003

- 8:45 **Introductory Remarks by the Co-Chairmen of the Workshop**
Alex Joia, Fixed Income Analyst, BIS, Banking Department
Srichander Ramaswamy, Head of Investment Analysis, BIS, Banking Department
- 9:45 **Introduction to Corporate Bond Portfolio Management**
- Corporate bonds as an asset class
 - The case for corporate bonds
 - Quantifying market risk in a corporate bond portfolio
- Srichander Ramaswamy, Head of Investment Analysis, BIS, Banking Department*
- 10:45 Coffee break
- 11:15 **Introduction to Mortgage-Backed Securities Market**
- Market structure and cash flow characteristics
 - Prepayment risk
 - The case for MBS
- Robert Scott, Portfolio Manager, BIS, Banking Department*

- 12:30 Lunch
- 14:00 **Quantifying Credit Risk in a Corporate Bond**
- Quantifying credit risk in default mode
 - Quantifying credit risk in migration mode
- Srichander Ramaswamy, Head of Investment Analysis, BIS, Banking Department*
- 15:15 Coffee break
- 15:45 **A Framework for Valuing Fixed Income Securities**
- Present value of future payments
 - Valuing callable bonds
 - Valuing MBS
- Alex Joia, Fixed Income Analyst, BIS, Banking Department*
- 17:00 **Discussion Session: Summary of the Day's Proceedings**
- 19:00 Dinner

Tuesday, 2 September 2003

- 09:00 **Aggregating Credit Risk in a Corporate Bond Portfolio**
- Asset return correlation, loss correlation, default correlation
 - Aggregating portfolio credit risk under default mode
 - Aggregating portfolio credit risk under migration mode
- Srichander Ramaswamy, Head of Investment Analysis, BIS, Banking Department*
- 10:30 Coffee break
- 11:00 **MBS Analytics and Prepayment Modelling**
- A simple prepayment model
 - Risk measures and MBS valuation
 - Empirical measures
- Alex Joia, Fixed Income Analyst, BIS, Banking Department*
- 12:30 Lunch
- 14:00 **Simulating the Loss Distribution of a Corporate Bond Portfolio**
- Loss simulation under multivariate normal distribution
 - Loss simulation under multivariate Student t distribution
 - Computing tail risk and relative credit risk measures
- Srichander Ramaswamy, Head of Investment Analysis, BIS, Banking Department*
- 15:15 Coffee break

- 15:45 **Managing a MBS Portfolio**
- Aggregating the risks in a MBS portfolio
 - Index replication
 - Relative value analysis
- Robert Scott, Portfolio Manager, BIS, Banking Department*
- 17:00 **Discussion Session: Summary of the Day's Proceedings**
- 19:00 Dinner
- 20:00 Cultural Evening

Wednesday, 3 September 2003

- 08:45 **Roundtable Discussion among Participants
Investing in New Asset Classes: Hurdles to Progress**
Chaired by BIS
- 10:00 Coffee Break
- 10:30 Excursion
- 19:00 Dinner

Thursday, 4 September 2003

- 09:00 **Corporate Governance: Risk Control Framework**
- Framework for internal risk control systems
 - The BIS risk control framework
- Jens Ulrich, Head of Risk Control, BIS, Risk Control*
- 10:15 Coffee break
- 10:45 **Operational Risk**
- Operational risk measurement
 - Operational risk management
- Jens Ulrich, Head of Risk Control, BIS, Risk Control*
- 12:00 Lunch
- 13:30 **Problems Related to Credit Risk Measurement**
- Data-related issues
 - Modelling issues
- Wolfgang Gehlen, Head of Risk Methodology, BIS, Risk Control*
- 15:00 Coffee Break

- 15:30 **Advanced Market Risk Modelling Techniques**
- Variance-covariance approach
 - Monte Carlo simulation
 - Stress testing
- Roland Raskopf, Senior Financial Sector Specialist, BIS, Financial Stability Institute*
- 17:00 **Discussion Session: Summary of the Day's Proceedings**
- 19:00 Dinner

Friday, 5 September 2003

- 08:45 **Cashflow Mapping for Value at Risk**
- Assumptions involved and potential limitations
- Marc Henrard, Senior Quantitative Analyst, BIS, Banking Department*
- 09:45 **VaR Contribution**
- Extracting shift, twist and butterfly contributions
- Marc Henrard, Senior Quantitative Analyst, BIS, Banking Department*
- 10:45 Coffee break
- 11:15 **Roundtable Discussion among Participants**
- Chaired by BIS*
- 12:30 Lunch
- 14:30 Bus departs to Zurich airport/Zurich city