Interest Rate Models: Forecasting Interest Rates and application

28th, 29td December 2010

Interest Rate Models

1.0 Learning objectives

The workshop is aimed at treasury, risk and fixed income investors who use interest rate forecasting tools for arbitrage, ALM, risk or credit policy decisions. Teaching methodology is based on intensive hands on model building and application cases.

The workshop covers four different families of interest rate models starting with the simplest CIR (Cox, Ingersoll & Ross) and finishing up with the multi-factor HJM model. We then look at applications of the same models in Asset Liability Management, Fixed Income Arbitrage, monetary policy announcements and predicting unexpected interest rate shocks. A final session extends the analysis to a macro economic model of the economy using core interest rate drivers and Monte Carlo simulation.

By the end of this workshop participants will be able to

- Use models to identify fixed income arbitrage opportunities in treasury term structure
- Build basic and advance interest rate models in excel for forecasting and extrapolating interest rates across the full range of maturity tenors
- Review the impact of external shocks (such as oil prices) on domestic interest rate environment and monetary policy
- Review interest rate inputs for ALCO meetings as well as ALM models.

The packaged workshop represents an integrated skill building exercise that combines concepts with practical hands on application and is aimed at professionals who deal with pricing, valuation and portfolio management issues related to fixed income markets in Pakistan.

2.0 Workshop schedule and Location

Karachi Marriot, Karachi, Pakistan.

09:00 am – 09:15 pm – Registration & networking
09:15 am – 11:15 am – First Session
11:15 am – 11:30 am – Tea break
11:30 am – 01:30 pm – Second Session
01:30 pm – 02:30 pm – Lunch break
02:30 pm – 04:30 pm – Third Session
04:30 pm – 04:45 pm – Wrap up

3.0 Workshop level

Intermediate and advance users only. Some familiarity with interest rate modeling required.

All participants are requested to arrange Laptops with a functional version of Microsoft Excel. A limited number of laptops are available for rental on a first come first serve basis.

4.0 About Alchemy Technologies

Alchemy is a leading regional Enterprise Risk advisory firm. As of the date of this workshop we have picked up three industry and peer awards and conducted more than 95 workshops in the areas of pricing, valuation, risk management, portfolio optimization and Basel II reporting in Karachi, Lahore, Islamabad, Dubai, Abu Dhabi, Riyadh, Bahrain, Singapore, Kula Lumpur and Bangkok. Our product portfolio include risk based technology solutions for treasury management, probability of default modeling, Basel II reporting, Asset Liability Management, Stress Testing, and Financial Institution Limit Allocation.

5.0 Course and Session Outline

Session	Title	Topics
One	The Interest Rate Modeling Crash Course in 90 minutes	The term structure, Zero and Forward Rates. Building Static Interest Rate Models. Bootstrapping Zero and Forward Curves. Using interpolation and interpreting Forward Curve. Interest Rate Model Families. Cox, Ingersoll and Ross (CIR), Black, Derman and Toy (BDT) and the multifactor HJM. Building models using macro factors.
Two	Case Study A: CIR and ALM – Generating Rates and re-pricing products	Building a simple interest rate generator and linking it to the ALM model. Revaluing loan book and collateral impairment. Linking ALM inputs with model drivers. Calibrating CIR for domestic interest rate data.
Three	Case Study B: Term Structure model and BDT: When issued pricing	Building BDT (Black, Derman and Toy). Filling in the blanks for intermediate tenor rates. Using BDT to price when issued securities and identifying opportunities for fixed income arbitrage.
Four	Case Study C: Forecasting forward rates and HJM	Forward rates and the multifactor HJM model. Using HJM to price interest rate derivatives. Building the HJM model.
Five	Case Study C: Forecasting forward rates and HJM	Multifactor model applications continued. Building and testing the HJM model. PCA Analysis and HJM calibration.
Six	Case Study D: Simulating the Economy	Building a macro economic model for simulating a national economy and monetary policy decisions. Identifying drivers. Implementing the model. Interpreting results. Review, wrap up and closure.

6.0 Facilitator profile

Jawwad Ahmed Farid is a Fellow Society of Actuaries (Chicago), a MBA from Columbia Business School (New York City) and a computer science graduate. During the last 18 years, he has worked as a consultant in North America, Pakistan and the United Kingdom with a number of blue chip clients including Hartford Life, Aegon, American General, Goldman Sachs, ING, Manu Life, Safeco, Merrill Lynch, Met Life, Sun America, Nationwide, Phoenix Life, Sumitomo Mitsui Bank, Sun Life of Canada, Pacific Life, AllState, Fidelity Investments, Transamerica, Skandia, GE Financial Assurance, Lincoln National, Ohio National, AXA Equitable and Washington Mutual Bank.

Jawwad's core areas of expertise include Asset/Risk Management, Investments, Product Development & the Financial Services Back Office. Jawwad blends a rare combination of risk management, information systems, international standards, business and product development skill set side by side with his actuarial expertise. His regional client list includes First Gulf Bank, Riyad Bank, Dubai Islamic Bank, Noor Islamic Bank, Dubai Bonds, Deutsche Bank, State Bank of Pakistan, National Bank of Pakistan, Muslim Commercial Bank, Crescent Commercial, MyBank, Dawood Islamic Bank, KASB Bank, United Bank Limited, Pak-Kuwait Investment, Saudi Pak Commercial Bank, ABN AMRO, State Life Insurance, Dawood Family Takaful, Asia Health Care, Adamjee Insurance, Shell Pakistan, International General Insurance and others.

7.0 Workshop Fee, Restrictions and Cut off dates

20 participants only. Rs. 97,500 net per participant. To avoid disappointment, please ensure that your nomination and payments are received by Wednesday, 4:00 pm, 17th December, 2010. Please note that the workshop fee is net of all applicable taxes and deductions.

The professional and rental fees above cover cost of materials, workshop facility, tea and lunch for two days. Logistics, travel, boarding for participants coming from outside Karachi would need to be arranged separately and is not included.

For more information, please contact
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