CQF January 2009
Module 4.4
Live Class: April 16
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Martingales and Fixed Income Valuation

In this lecture:

We apply probabilistic and martingale methods to the pricing of bonds and derivatives struck on bonds using short-term rate models. We see:

- The pricing of interest rate products in a probabilistic setting;
- The equivalent martingale measures;
- The fundamental asset pricing formula for bonds;
- Application for popular interest rates models;
- The dynamics of bond prices;
- The forward measure;
- The fundamental asset pricing formula for derivatives on bonds;
- Rights and wrongs of short-term interest rate models;

Summary:

The popularity of short term interest rate models has never waned among practitioners. But how far can we really go with them? What are their advantages and limitation? In this lecture we develop pricing models for zero-coupon bonds and for bond derivatives based on short-term interest rates, and in the process answer these key questions. We also motivate the development of forward rate models as a means to address the shortcomings of short term interest rate models and bridge the gap between the two classes of models.