CQF 2009
Module 5.2
Live Lecture: May 5, 2009
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Reduced Form Models

In this lecture:
- Modeling default by Poisson Process
- Derivation of pricing PDE for a risky bond
- Fundamental pricing formula for general contingent claims subject to default risk
- Affine intensity models

By the end of this lecture, you will be able to:
- Understand what are reduced form (intensity based) models
- Its pros and cons relative to structural model
- Derive risky bond pricing equation when both interest rate and hazard rate (intensity) are stochastic
- Solve simple affine intensity models

Summary:

- Poisson process can be used to model default if intensity is constant
- Stochastic default intensity leads us to higher dimension bond pricing PDE
- Risky bond pricing PDE is consistent with fundamental pricing formula by Feynman-Kac
- Reduced form models can be tractable in affine term structure model