On Some Model for the Term Structure of Interest Rates

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Abstract

We surveyed and studied the models for one and two factor term structure of interest rate. They are to some extent a modification of the results of Vasicek [1977]. We also relate our results with martingale representation theorem by Harrison and Pliska [1981]. The basic mathematical tools are found in Ito calculus ; Feynman-Kac formula and Maruyama-Girsanov theorem in particular. The non-arbitrage condition is the sole economical assumption of whole analysis, which can be contrasted with the approach by Cox, Ingersoll and Ross [1985]. Using the method of Siegmund [1985], which is the combination of reflection principle and change of measure formula via likelihood ratio, we may obtain the measure under which the discounted zero coupon bond price are martingale.