

## 随机利率下奇异期权的定价公式

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**摘要** 在随机利率条件下, 借助于测度变换获得了复合看涨期权的一般的定价公式, 同时利用鞅理论和Girsanov定理, 在利率服从于扩展的Vasicek利率模型时, 得到了复合看涨期权精确的定价公式. 用同样的方法, 考虑了预设日期的重置看涨期权的定价问题, 在利率服从同样的利率模型时, 获得了重置看涨期权的定价公式. 数值化的结果进一步说明了当利率遵循扩展的 Vasicek利率模型时, B-S看涨期权的价格关于标的资产的价格是严格单调递增的, 复合看涨期权的 Geske公式是可以推广到随机利率的情况.

**关键词** [复合期权](#) [重置期权](#) [测度变换](#) [Girsanov定理](#)

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## Exotic Options Pricing Formulae with Stochastic Interest Rates

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**Abstract** A general pricing formula for compound call option is derived when the interest rate is stochastic by the change of measure in this paper. At the same time, an analytic pricing formula for compound call option is also given in an extended Vasicek's interest rate framework by applying the martingale theory and Girsanov's Theorem. The pricing formula for the reset call option with predetermined dates is also obtained when the interest rate follows the same process by the same approach. Numerical results explain that the price of B-S call option is strictly monotonically increasing in stock price when the interest rate follows the Vasicek's model. The generalization of the Geske-formula for compound option to stochastic interest rates is possible.

**Key words** [compound options](#) [reset options](#) [change of measure](#) [Girsanov's theorem](#)

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