

1. Record Nr.	UNINA9910807429803321
Autore	Svishchuk A. V (Anatolii Vitalevich)
Titolo	Modeling and pricing of swaps for financial and energy markets with stochastic volatilities / / Anatoliy Swishchuk, University of Calgary, Canada
Pubbl/distr/stampa	Teanck, NJ, : World Scientific, c2013 New Jersey : , : World Scientific, , [2013] 2013
ISBN	981-4440-13-2
Descrizione fisica	1 online resource (xxii, 303 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	332.64/5
Soggetti	Swaps (Finance) - Mathematical models Finance - Mathematical models Stochastic processes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Acknowledgments; Contents; 1. Stochastic Volatility; 1.1 Introduction; 1.2 Non-Stochastic Volatilities; 1.2.1 Historical Volatility; 1.2.2 Implied Volatility; 1.2.3 Level-Dependent Volatility and Local Volatility; 1.3 Stochastic Volatility; 1.3.1 Approaches to Introduce Stochastic Volatility; 1.3.2 Discrete Models for Stochastic Volatility; 1.3.3 Jump-Diffusion Volatility; 1.3.4 Multi-Factor Models for Stochastic Volatility; 1.4 Summary; Bibliography; 2. Stochastic Volatility Models; 2.1 Introduction; 2.2 Heston Stochastic Volatility Model; 2.3 Stochastic Volatility with Delay 2.4 Multi-Factor Stochastic Volatility Models 2.5 Stochastic Volatility Models with Delay and Jumps; 2.6 Levy-Based Stochastic Volatility with Delay; 2.7 Delayed Heston Model; 2.8 Semi-Markov-Modulated Stochastic Volatility; 2.9 COGARCH(1,1) Stochastic Volatility Model; 2.10 Stochastic Volatility Driven by Fractional Brownian Motion; 2.10.1 Stochastic Volatility Driven by Fractional Ornstein-Uhlenbeck Process; 2.10.2 Stochastic Volatility Driven by Fractional Vasicek Process; 2.10.3 Markets with Stochastic Volatility Driven by Geometric Fractional Brownian Motion

2.10.4 Stochastic Volatility Driven by Fractional Continuous- Time GARCH Process2.11 Mean-Reverting Stochastic Volatility Model (Continuous-Time GARCH Model) in Energy Markets; 2.12 Summary; Bibliography; 3. Swaps; 3.1 Introduction; 3.2 Definitions of Swaps; 3.2.1 Variance and Volatility Swaps; 3.2.2 Covariance and Correlation Swaps; 3.2.3 Pseudo-Swaps; 3.3 Summary; Bibliography; 4. Change of Time Methods; 4.1 Introduction; 4.2 Descriptions of the Change of Time Methods; 4.2.1 The General Theory of Time Changes; 4.2.1.1 Martingale and Semimartingale Settings of Change of Time 4.2.1.2 Stochastic Differential Equations Setting of Change of Time4.2.2 Subordinators as Time Changes; 4.2.2.1 Subordinators; 4.2.2.2 Subordinators and Stochastic Volatility; 4.3 Applications of Change of Time Method; 4.3.1 Black-Scholes by Change of Time Method; 4.3.2 An Option Pricing Formula for a Mean-Reverting Asset Model Using a Change of Time Method; 4.3.3 Swaps by Change of Time Method in Classical Heston Model; 4.3.4 Swaps by Change of Time Method in Delayed Heston Model; 4.4 Different Settings of the Change of Time Method; 4.4.0.1 Change of Time Method in Martingale Setting 4.4.0.2 Change of Time Method in Stochastic Differential Equation Setting4.4.0.3 Examples: Solutions of Some SDEs17; 4.5 Summary; Bibliography; 5. Black-Scholes Formula by Change of Time Method; 5.1 Introduction; 5.2 Black-Scholes Formula by Change of Time Method; 5.2.1 Black-Scholes Formula; 5.2.2 Solution of SDE for Geometric Brownian Motion using Change of Time Method; 5.2.3 Properties of the Process $W(t-1)$; 5.3 Black-Scholes Formula by Change of Time Method; 5.4 Summary; Bibliography; 6. Modeling and Pricing of Swaps for Heston Model; 6.1 Introduction; 6.2 Variance and Volatility Swaps 6.2.1 Variance and Volatility Swaps for Heston Model

Sommario/riassunto

Modeling and Pricing of Swaps for Financial and Energy Markets with Stochastic Volatilities is devoted to the modeling and pricing of various kinds of swaps, such as those for variance, volatility, covariance, correlation, for financial and energy markets with different stochastic volatilities, which include CIR process, regime-switching, delayed, mean-reverting, multi-factor, fractional, Levy-based, semi-Markov and COGARCH(1,1). One of the main methods used in this book is change of time method. The book outlines how the change of time method works for different kinds of models and problems a
