Option Prices as Probabilities: A New Look at Generalized Black-Scholes Formulae (Springer Finance)

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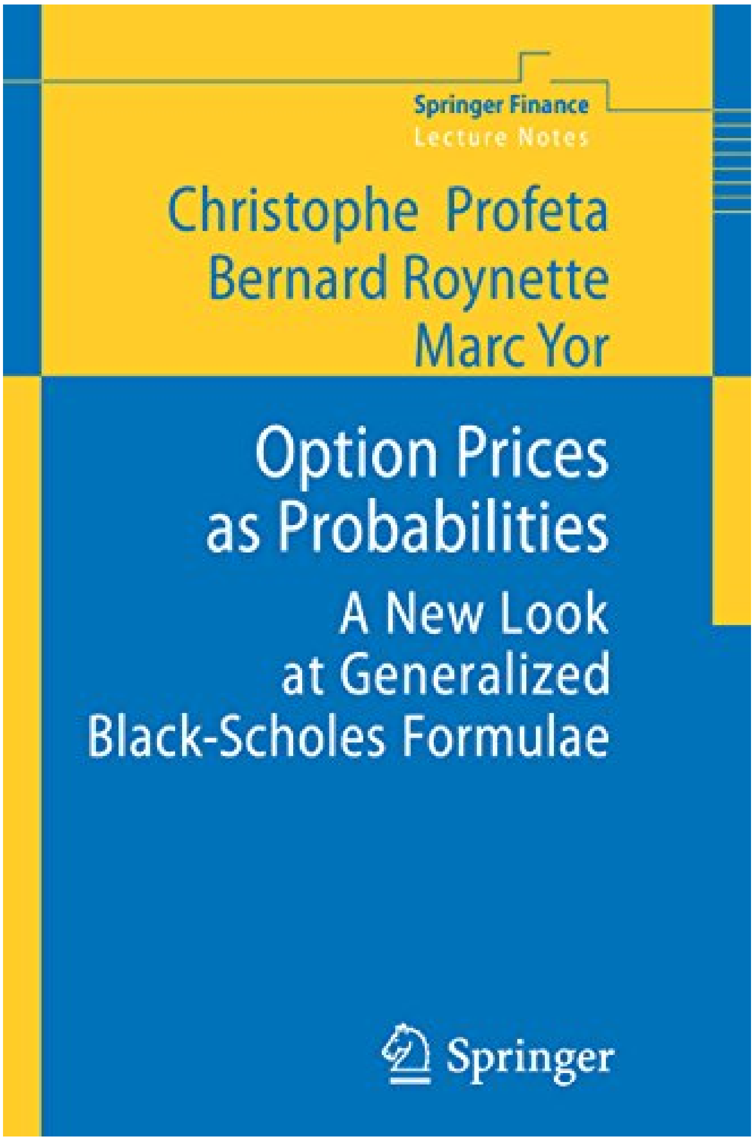

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Christophe Profeta, Bernard Roynette, Marc Yor : Option Prices as Probabilities: A New Look at Generalized Black-Scholes Formulae (Springer Finance) before purchasing it in order to gage whether or not it would be worth my time, and all praised Option Prices as Probabilities: A New Look at Generalized Black-Scholes Formulae

(Springer Finance):

Discovered in the seventies, Black-Scholes formula continues to play a central role in Mathematical Finance. We recall this formula. Let (B ,t? 0; F ,t? 0, P) - t t note a standard Brownian motion with B = 0, (F ,t? 0) being its natural ?ltra- 0 t t tion. Let E := exp B? ,t? 0 denote the exponential martingale associated t t 2 to (B ,t? 0). This martingale, also called geometric Brownian motion, is a model t to describe the evolution of prices of a risky asset. Let, for every K? 0: + ? (t) :=E (K?E) (0.1) K t and + C (t) :=E (E?K) (0.2) K t denote respectively the price of a European put, resp. of a European call, associated with this martingale. Let N be the cumulative distribution function of a reduced Gaussian variable: x 2 y 1 ? 2 ? N (x) := e dy. (0.3) 2? ?? The celebrated Black-Scholes formula gives an explicit expression of? (t) and K C (t) in terms ofN : K ? ? log(K) t log(K) t ? (t)= KN ? + ?N ? ? (0.4) K t 2 t 2 and ? ?

From the Back CoverThe Black-Scholes formula plays a central role in Mathematical Finance; it gives the right price at which buyer and seller can agree with, in the geometric Brownian framework, when strike K and maturity T are given. This yields an explicit well-known formula, obtained by Black and Scholes in 1973. The present volume gives another representation of this formula in terms of Brownian last passages times, which, to our knowledge, has never been made in this sense. The volume is devoted to various extensions and discussions of features and quantities stemming from the last passages times representation in the Brownian case such as: past-future martingales, last passage times up to a finite horizon, pseudo-inverses of processes... They are developed in eight chapters, with complements, appendices and exercises.