<<套利数学>>

图书基本信息

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内容概要

in 1973 f. black and m. scholes published their pathbreaking paper [bs 73]on option pricing. the key idea -- attributed to r. melton in a footnote of the black-scholes paper -- is the use of trading in continuous time and the notion of arbitrage. the simple and economically very convincing ''principle of no-arbitrage" allows one to derive, in certain mathematical models of financial markets (such as the samuelson model, [s 65], nowadays also referred to as the "black-scholes" model, based on geometric brownian motion), unique prices for options and other contingent claims.this remarkable achievement by f. black, m. scholes and r. merton had a profound effect on financial markets and it shifted the paradigm of deal-ing with financial risks towards the use of quite sophisticated mathematical models.

书籍目录

章节摘录

Let us turn back to the no-arbitrage theory developed in Chap. 2 to raise againthe question： what can we deduce from applying the no-arbitrage principlewith respect to pricing and hedging of derivative securities？

While we obtained satisfactory and mathematically rigorous answers tothese questions in the case of a finite underlying probability space inChap. 2， we saw in Chap. 4， that the basic examples for this theory， theBachelier and the BlackScholes model， do not fit into this easy setting， asthey involve Brownian motion.

In Chap. 4 we overcame this difficulty either by using well-known resultsfrom stochastic analysis （e.g.， the martingale representation Theorem 4.2.1for the Brownian filtration）， or by appealing to the faith of the reader， thatthe results obtained in the finite case also carry over —— mutatis mutandis ——to more general situations， as we did when applying the change of num~rairetheorem to the calculation of the Black-Scholes model.