Taylor & Francis
Online

Home ► All Journals ► Mathematics, Statistics & Data Science ► Applied Mathematical Finance
► List of Issues ► Volume 10, Issue 1 ► Contingent claim pricing using probabili ....

Applied Mathematical Finance ›

Volume 10, 2003 - Issue 1

Original Articles

Contingent claim pricing using probability distortion operators: methods from insurance risk pricing and their relationship to financial theory

Mahmoud Hamada & Michael Sherris

66 Cite this article   ⬈ https://doi.org/10.1080/1350486032000069580

References   66 Citations   Metrics   Reprints & Permissions

Read this article   ❮ Share

Abstract

This paper considers the pricing of contingent claims using an approach developed and used in insurance pricing. The approach is of interest and significance because of the increased integration of insurance and financial markets and also because insurance-related risks are trading in financial markets as a result of securitization and new contracts on futures exchanges. This approach uses probability distortion functions as the dual of the utility functions used in financial theory. The pricing formula is the same as the Black-Scholes formula for contingent claims when the underlying asset price is log-normal. The paper compares the probability distortion function approach with that based on financial theory. The theory underlying the approaches is set out and limitations on the use of the insurance-based approach are illustrated. The probability

distortion approach is extended to the pricing of contingent claims for more general assumptions than those used for Black-Scholes option pricing.

Keywords:

Contingent Claim Pricing   Probability Distortion Functions   Non-expected Utility   Insurance Pricing

Black And Sholes

Related Research Data

Optimal consumption and portfolio policies when asset prices follow a diffusion process
Source: Journal of Economic Theory

A Class of Distortion Operators for Pricing Financial and Insurance Risks
Source: Journal of Risk & Insurance

The Dual Theory of Choice under Risk
Source: Econometrica

A class of non-expected utility risk measures and implications for asset allocations
Source: Insurance Mathematics and Economics

The valuation of options for alternative stochastic processes
Source: Journal of Financial Economics

The Constant Elasticity of Variance Model and Its Implications For Option Pricing
Source: The Journal of Finance

A Survey of Contingent-Claims Approaches to Risky Debt Valuation
Source: The Journal of Risk Finance

Premium Calculation by Transforming the Layer Premium Density

Related research ⓘ

People also read

Recommended articles

Cited by
29

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email

✉ Sign me up