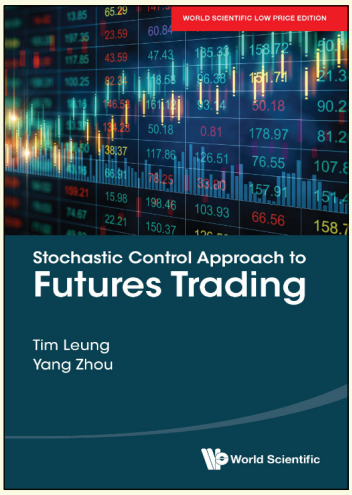
Stochastic Control Approach to Futures Trading



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ABOUT THE BOOK

Futures play an integral role in the financial markets. Tens of millions of contracts are traded on futures exchanges around the globe every day. In recent years, futures have been incorporated into a wide array of financial securities and have become the driving force behind their price dynamics. Managed futures portfolios and commodity trading advisors (CTAs), with hundreds of billions under management, are major parts of the hedge fund industry.

This book presents a unique stochastic control approach to dynamic futures trading. Multiple stochastic models are designed to capture the salient features of various market regimes and dynamics. They are useful for pricing futures contracts and building futures portfolios. The authors analyze the mathematical problems associated with futures trading problems in different market environments. A series of numerical examples are presented to illustrate the optimal trading strategies. In addition, analytic formulas and numerical methods are provided for fast implementation. The book is useful for practitioners interested in futures trading as well as graduate students and researchers in Quantitative Finance.

READERSHIP

Primary Market: Undergraduate, master-level, and PhD students in quantitative finance, mathematics, applied mathematics, operations research, and stochastics; Quantitative finance professionals, including traders and quantitative researchers; Faculty and researchers in the field of quantitative finance and stochastic control. Secondary Market: Graduate students in related fields, such as optimization and systems engineering; Commodity markets and futures markets professionals (traders, fund managers, etc).

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Contd.

- Dynamic Futures Portfolios Under a Multifactor Gaussian Framework
- Futures Pricing in a Regime-Switching Market
- Dynamic Futures Portfolio in a Regime-Switching Market
- Dynamic Futures Portfolios with Stochastic Basis

ABOUT THE AUTHORS

Tim Leung is the Boeing Endowed Chair Professor of Applied Mathematics and Director of the Computational Finance & Risk Management (CFRM) program at the University of Washington in Seattle. Previously, he had been a professor at Johns Hopkins University and Columbia University. He obtained his PhD in Financial Engineering & Operations Research from Princeton University. He has published over 70 peer-reviewed articles, along with several books on the topics of Mean Reversion Trading, ETFs, Futures Trading, and Employee Stock Options. Professor Leung serves on the advisory board for the AI for Finance Institute as well as the editorial board of multiple journals in quantitative finance.

Yang Zhou received his PhD in Applied Mathematics from the University of Washington. His research areas include financial mathematics, futures trading, and stochastic control. He has published several journal articles on dynamic futures portfolios, employee stock options valuation, and regime-switching models. Currently, he is a Quantitative Analytic Specialist at Wells Fargo, focusing on counterparty risk and advanced risk models.

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