

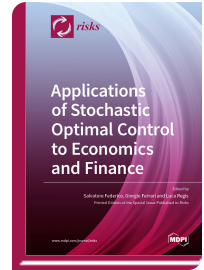
Special Issue Reprint

Applications of Stochastic Optimal Control to Economics and Finance

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In a world dominated by uncertainty, modeling and understanding the optimal behavior of agents is of the utmost importance. Many problems in economics, finance, and actuarial science naturally require decision makers to undertake choices in stochastic environments. Examples include optimal individual consumption and retirement choices, optimal management of portfolios and risk, hedging, optimal timing issues in pricing American options, and investment decisions. Stochastic control theory provides the methods and results to tackle all such problems.

This book is a collection of the papers published in the Special Issue “Applications of Stochastic Optimal Control to Economics and Finance”, which appeared in the open access journal *Risks* in 2019. It contains seven peer-reviewed papers dealing with stochastic control models motivated by important questions in economics and finance. Each model is rigorously mathematically funded and treated, and the numerical methods are employed to derive the optimal solution. The topics of the book’s chapters range from optimal public debt management to optimal reinsurance, real options in energy markets, and optimal portfolio choice in partial and complete information settings. From a mathematical point of view, techniques and arguments of dynamic programming theory, filtering theory, optimal dimensional diffusions and multi-dimensional jump processes are used.



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