Record Nr. UNINA9910310643903321

Autore Fichtinger Johannes

Titolo The Single-Period Inventory Model with Spectral Risk Measures

Pubbl/distr/stampa Frankfurt a.M.:,: Peter Lang GmbH, Internationaler Verlag der

Wissenschaften, , 2011

©2012

ISBN 3-631-75398-5

Edizione [1st ed.]

Descrizione fisica viii, 124 p. : ill. ; ; 22 cm

Collana Forschungsergebnisse der Wirtschaftsuniversitat Wien; ; Bd. 49

Disciplina 658.787

Soggetti Inventory control - Mathematical models

Risk management - Mathematical models

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di bibliografia Includes bibliographical references.

Nota di contenuto Cover -- 1 Introduction and Foundations -- 1.1 The Newsvendor Model

-- 1.1.1 The inventory problem -- 1.1.2 The inventory & amp -- pricing problem -- 1.2 Terminology, definitions used and conventions -- 1.3 Structure of the work -- 2 Risk Measurement and Optimization -- 2.1 Early approaches to risk measures -- 2.1.1 Expected utility theory --2.1.2 Symmetric and downside risk measures -- 2.1.3 Value-at-Risk (VaR) -- 2.1.4 Artzner's axioms of coherency: How to measure risk --2.1.5 VaR in view of Artzner's axioms -- 2.2 Conditional Value-at-Risk (CVaR) -- 2.2.1 Definition of conditional Value-at-Risk -- 2.2.2 Optimization of CVaR -- 2.3 Spectral measures of risk -- 2.3.1 Definition of spectral measures of risk -- 2.3.2 Discussion on how to model the risk spectrum -- 2.3.3 Optimization of general spectral measures of risk -- 3 Inventory Problem with Risk Measures -- 3.1 A review of inventory control with risk preferences -- 3.2 Basic inventory control problem -- 3.2.1 Optimal policy and structural properties for the basic inventory problem -- 3.2.2 Specific examples of risk spectra in the basic inventory problem -- 3.2.3 Numerical study of the basic inventory control problem -- 3.3 Inventory control with shortage penalty cost -- 3.3.1 Optimal policy and structural properties for the inventory problem with shortage penalty costs -- 3.3.2 Specific examples of risk spectra in the inventory problem with shortage penalty cost -- 3.3.3 Numerical study of the inventory control problem

with shortage penalty cost -- 3.4 Applications in supply chain management -- 4 Inventory & pricing Problem with Risk Measures -- 4.1 The basic inventory & pricing problem -- 4.1.1 Necessary properties of the demand (error) distribution and risk spectra preserving them -- 4.1.2 Results for the joint optimal inventory & pricing problem.

4.1.3 Results for the pricing-only problem -- 4.1.4 Numerical study of the basic inventory & pricing problem -- 4.1.5 Analysis of the mean-CVaR risk spectrum -- 4.2 The inventory & pricing problem with shortage penalty cost -- 4.2.1 Joint optimality and unimodality -- 4.2.2 Joint optimal controls -- 4.2.3 Joint optimal performance measures -- 5 Conclusion -- References -- A Proofs.

Sommario/riassunto

Inventory management and pricing decisions based on quantitative models both in industrial practice and academic works often rely on minimizing expected cost, which refers to the concept of risk-neutrality of the decision maker. In this title, spectral risk measures are applied to price-setting newsvendor problem and optimal policies are derived.