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Nota di contenuto	Preface; List of Symbols; Contents; 1. Modeling uncertain outcomes; 1.1 The three M's of decision making under uncertainty; 1.2 Probability models and scenario distributions; 1.2.1 Distribution functions and quantile functions; 1.2.2 Joint distributions and couplings; 1.2.3 Utility functions and order relations; 1.2.4 Compounding; 1.3 Standard statistical parameters; 1.3.1 Location parameters; 1.3.2 Dispersion parameters; 1.3.3 Correlation parameters; 2. Measuring single-period risk; 2.1 Probability functionals and their properties; 2.1.1 Properties of probability functionals 2.1.2 Version-independent properties of probability functionals 2.2 Acceptability functionals and deviation risk functionals; 2.2.1 Acceptance sets for translation-equivariant functionals; 2.2.2 Dual representations of concave and convex functionals; 2.2.3 The average value-at-risk; 2.2.4 Kusuoka representations; 2.3 Conditional acceptability and risk mappings; 2.3.1 Version independent conditional acceptability mappings; 2.3.2 More about the conditional average value-at-risk; 2.4 Classes of version-independent acceptability-type

functionals; 2.4.1 Expected utility
2.4.2 Distortion functionals 2.4.3 Sup-convolutions; 2.4.4 Single-period polyhedral acceptability functionals; 2.4.5 Risk-corrected expectation and mean-risk models; 2.5 Classes of version-independent deviation-type functionals; 2.5.1 Deviation functionals of the form $E[h(Y \mid EY)]$; 2.5.2 Deviation functionals of the form $\|Y - EY\|_h$; 2.5.3 Deviation functionals of the form $\|Y - EY\|_h$; 2.5.4 Deviation functionals of the form $E[h(Y - EY)]$; 2.5.5 Minimal loss risk functionals; 2.6 Summary; 3. Measuring multi-period risk; 3.1 Introduction to multi-period models
3.1.1 Evolving information: filtrations and tree processes
3.1.2 Dynamic acceptability functionals; 3.1.3 Introducing information into single-period functionals; 3.1.3.1 Expected conditional acceptability functionals; 3.1.3.2 Dual extension of single-period functionals; 3.2 Multi-period risk functionals: basic properties; 3.2.1 Dual representations of multi-period acceptability functionals; 3.2.2 Version-independent multi-period risk functionals; 3.3 Classes of multi-period acceptability functionals; 3.3.1 Separable functionals; 3.3.2 Risk functionals of the value-of-information type
3.3.3 More about the multi-period average value-at-risk 3.3.4 Composition of conditional acceptability mappings; 3.3.5 Polyhedral multi-period acceptability functionals; 3.3.6 Polyhedral acceptability functionals in multi-stage stochastic programs; 3.4 Summary; 4. Single-stage decision models; 4.1 Stochastic optimization; 4.2 Efficient frontiers; 4.2.1 Simple deviation risk models; 4.2.2 Discrete models; 4.2.3 Standard deviation efficiency; 4.2.3.1 Introducing a risk-free asset; 4.2.4 Lower standard deviation efficiency; 4.2.5 Mean absolute deviation efficiency
4.2.6 Average value-at-risk deviation efficiency

Sommario/riassunto

This book is the first in the market to treat single- and multi-period risk measures (risk functionals) in a thorough, comprehensive manner. It combines the treatment of properties of the risk measures with the related aspects of decision making under risk. The book introduces the theory of risk measures in a mathematically sound way. It contains properties, characterizations and representations of risk functionals for single-period and multi-period activities, and also shows the embedding of such functionals in decision models and the properties of these models.