

1. Record Nr.	UNINA9910825531003321
Autore	Rebonato Riccardo
Titolo	Coherent stress testing : a Bayesian approach to the analysis of financial stress / / Riccardo Rebonato
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, 2010
ISBN	9786612683787 9780470971482 0470971487 9781118374719 1118374711 9781282683785 1282683780 9780470667361 0470667362
Edizione	[1st ed.]
Descrizione fisica	1 online resource (241 p.)
Disciplina	658.15/501519542
Soggetti	Risk management Probabilities Bayesian statistical decision theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Coherent Stress Testing -- Contents -- Acknowledgements -- 1 Introduction -- 1.1 Why We Need Stress Testing -- 1.2 Plan of the Book -- 1.3 Suggestions for Further Reading -- I Data, Models and Reality -- 2 Risk and Uncertainty - or, Why Stress Testing is Not Enough -- 2.1 The Limits of Quantitative Risk Analysis -- 2.2 Risk or Uncertainty? -- 2.3 Suggested Reading -- 3 The Role of Models in Risk Management and Stress Testing -- 3.1 How Did We Get Here? -- 3.2 Statement of the Two Theses of this Chapter -- 3.3 Defence of the First Thesis (Centrality of Models) -- 3.3.1 Models as Indispensable Interpretative Tools -- 3.3.2 The Plurality-of-Models View -- 3.4 Defence of the Second Thesis (Coordination) -- 3.4.1 Traders as Agents -- 3.4.2 Agency Brings About Coordination -- 3.4.3 From Coordination to

Positive Feedback -- 3.5 The Role of Stress and Scenario Analysis --
 3.6 Suggestions for Further Reading -- 4 What Kind of Probability Do
 We Need in Risk Management? -- 4.1 Frequentist versus Subjective
 Probability -- 4.2 Tail Co-dependence -- 4.3 From Structural Models to
 Co-dependence -- 4.4 Association or Causation? -- 4.5 Suggestions
 for Further Reading -- II The Probabilistic Tools and Concepts --
 Probability with Boolean Variables I: Marginal and Conditional
 Probabilities -- 5.1 The Set-up and What We are Trying to Achieve --
 5.2 (Marginal) Probabilities -- 5.3 Deterministic Causal Relationship --
 5.4 Conditional Probabilities -- 5.5 Time Ordering and Causation --
 5.6 An Important Consequence: Bayes' Theorem -- 5.7 Independence
 -- 5.8 Two Worked-Out Examples -- 5.8.1 Dangerous Running --
 5.8.2 Rare and Even More Dangerous Diseases -- 5.9 Marginal and
 Conditional Probabilities: A Very Important Link -- 5.10 Interpreting
 and Generalizing the Factors -- 5.11 Conditional Probability Maps -- 6
 Probability with Boolean Variables II: Joint Probabilities.
 6.1 Conditioning on More Than One Event -- 6.2 Joint Probabilities --
 6.3 A Remark on Notation -- 6.4 From the Joint to the Marginal and the
 Conditional Probabilities -- 6.5 From the Joint Distribution to Event
 Correlation -- 6.6 From the Conditional and Marginal to the Joint
 Probabilities? -- 6.7 Putting Independence to Work -- 6.8 Conditional
 Independence -- 6.9 Obtaining Joint Probabilities with Conditional
 Independence -- 6.10 At a Glance -- 6.11 Summary -- 6.12
 Suggestions for Further Reading -- 7 Creating Probability Bounds --
 7.1 The Lay of the Land -- 7.2 Bounds on Joint Probabilities -- 7.3 How
 Tight are these Bounds in Practice? -- 8 Bayesian Nets I: An
 Introduction -- 8.1 Bayesian Nets: An Informal Definition -- 8.2 De-
 ning the Structure of Bayesian Nets -- 8.3 More About Conditional
 Independence -- 8.4 What Goes in the Conditional Probability Tables?
 -- 8.5 Useful Relationships -- 8.6 A Worked-Out Example -- 8.7 A
 Systematic Approach -- 8.8 What Can We Do with Bayesian Nets? --
 8.8.1 Unravelling the Causal Structure -- 8.8.2 Estimating the Joint
 Probabilities -- 8.9 Suggestions for Further Reading -- 9 Bayesian Nets
 II: Constructing Probability Tables -- 9.1 Statement of the Problem --
 9.2 Marginal Probabilities - First Approach -- 9.2.1 Starting from a
 Fixed Probability -- 9.2.2 Starting from a Fixed Magnitude of the Move
 -- 9.3 Marginal Probabilities - Second Approach -- 9.4 Handling
 Events of Different Probability -- 9.5 Conditional Probabilities: A
 Reasonable Starting Point -- 9.6 Conditional Probabilities: Checks and
 Constraints -- 9.6.1 Necessary Conditions -- 9.6.2 Triplet Conditions
 -- 9.6.3 Independence -- 9.6.4 Deterministic Causation -- 9.6.5
 Incompatibility of Events -- 9.7 Internal Compatibility of Conditional
 Probabilities: The Need for a Systematic Approach -- III Applications.
 10 Obtaining a Coherent Solution I: Linear Programming -- 10.1 Plan of
 the Work Ahead -- 10.2 Coherent Solution with Conditional
 Probabilities Only -- 10.3 The Methodology in Practice: First Pass --
 10.4 The CPU Cost of the Approach -- 10.5 Illustration of the Linear
 Programming Technique -- 10.6 What Can We Do with this
 Information? -- 10.6.1 Extracting Information with Conditional
 Probabilities Only -- 10.6.2 Extracting Information with Conditional
 and Marginal Probabilities -- 11 Obtaining a Coherent Solution II:
 Bayesian Nets -- 11.1 Solution with Marginal and n-conditioned
 Probabilities -- 11.1.1 Generalizing the Results -- 11.2 An 'Automatic'
 Prescription to Build Joint Probabilities -- 11.3 What Can We Do with
 this Information? -- 11.3.1 Risk-Adjusting Returns -- IV Making It
 Work In Practice -- 12 Overcoming Our Cognitive Biases -- 12.1
 Cognitive Shortcomings and Bounded Rationality -- 12.1.1 How
 Pervasive are Cognitive Shortcomings? -- 12.1.2 The Social Context --

12.1.3 Adaptiveness -- 12.2 Representativeness -- 12.3 Quantification of the Representativeness Bias -- 12.4 Causal/Diagnostic and Positive/Negative Biases -- 12.5 Conclusions -- 12.6 Suggestions for Further Reading -- 13 Selecting and Combining Stress Scenarios -- 13.1 Bottom Up or Top Down? -- 13.2 Relative Strengths and Weaknesses of the Two Approaches -- 13.3 Possible Approaches to a Top-Down Analysis -- 13.4 Sanity Checks -- 13.5 How to Combine Stresses - Handling the Dimensionality Curse -- 13.6 Combining the Macro and Bottom-Up Approaches -- 14 Governance -- 14.1 The Institutional Aspects of Stress Testing -- 14.1.1 Transparency and Ease of Use -- 14.1.2 Challenge by Non-specialists -- 14.1.3 Checks for Completeness -- 14.1.4 Interactions among Different Specialists -- 14.1.5 Auditability of the Process and of the Results -- 14.2 Lines of Criticism. 14.2.1 The Role of Subjective Inputs -- 14.2.2 The Complexity of the Stress-testing Process -- Appendix A Simple Introduction to Linear Programming -- A.1 Plan of the Appendix -- A.2 Linear Programming - A Refresher -- A.3 The Simplex Method -- References -- Index.

Sommario/riassunto

In Coherent Stress Testing: A Bayesian Approach, industry expert Riccardo Rebonato presents a groundbreaking new approach to this important but often undervalued part of the risk management toolkit. Based on the author's extensive work, research and presentations in the area, the book fills a gap in quantitative risk management by introducing a new and very intuitively appealing approach to stress testing based on expert judgement and Bayesian networks. It constitutes a radical departure from the traditional statistical methodologies based on Economic Capital or Extreme-Value-Theory approaches. The book is split into four parts. Part I looks at stress testing and at its role in modern risk management. It discusses the distinctions between risk and uncertainty, the different types of probability that are used in risk management today and for which tasks they are best used. Stress testing is positioned as a bridge between the statistical areas where VaR can be effective and the domain of total Keynesian uncertainty. Part II lays down the quantitative foundations for the concepts described in the rest of the book. Part III takes readers through the application of the tools discussed in part II, and introduces two different systematic approaches to obtaining a coherent stress testing output that can satisfy the needs of industry users and regulators. In part IV the author addresses more practical questions such as embedding the suggestions of the book into a viable governance structure.
