

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Record Nr.           | UNINA9910141562603321                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Autore                  | Habart-Corlosquet Marine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Titolo                  | VaR methodology for non-gaussian finance [[electronic resource] ] /<br>Marine Habart-Corlosquet, Jacques Janssen, Raimondo Manca                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pubbl/distr/stampa      | Hoboken, N.J., : ISTE Ltd./John Wiley and Sons Inc., 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ISBN                    | 1-118-73398-3<br>1-118-73369-X<br>1-118-73390-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Descrizione fisica      | 1 online resource (177 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Collana                 | Focus series in finance, business and management, , 2051-2481                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Altri autori (Persone)  | JanssenJacques<br>MancaRaimondo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Disciplina              | 332.0151                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Soggetti                | Financial risk management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Note generali           | Description based upon print version of record.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nota di contenuto       | Cover; Title Page; Contents; INTRODUCTION; CHAPTER 1. USE OF<br>VALUE-AT-RISK (VAR) TECHNIQUES FOR SOLVENCY II, BASEL II AND III;<br>1.1. Basic notions of VaR; 1.1.1. Definition; 1.1.2. Calculation methods;<br>1.1.3. Advantages and limits; 1.2. The use of VaR for insurance<br>companies; 1.2.1. Regulatory approach; 1.2.2. Risk profile approach;<br>1.3. The use of VaR for banks; 1.3.1. Basel II; 1.3.2. Basel III; 1.4.<br>Conclusion; CHAPTER 2. CLASSICAL VALUE-AT-RISK (VAR) METHODS;<br>2.1. Introduction; 2.2. Risk measures; 2.3. General form of the VaR;<br>2.4. VaR extensions: tail VaR and conditional VaR<br>2.5. VaR of an asset portfolio 2.5.1. VaR methodology; 2.6. A<br>simulation example: the rates of investment of assets; CHAPTER 3. VAR<br>EXTENSIONS FROM GAUSSIAN FINANCE TO NON-GAUSSIAN FINANCE;<br>3.1. Motivation; 3.2. The normal power approximation; 3.3. VaR<br>computation with extreme values; 3.3.1. Extreme value theory; 3.3.2.<br>VaR values; 3.3.3. Comparison of methods; 3.3.4. VaR values in<br>extreme theory; 3.4. VaR value for a risk with Pareto distribution; 3.4.1.<br>Forms of the Pareto distribution; 3.4.2. Explicit forms VaR and CVaR in<br>Pareto case; 3.4.3. Example of computation by simulation<br>3.5. Conclusion CHAPTER 4. NEW VAR METHODS OF NON-GAUSSIAN<br>FINANCE; 4.1. Levy processes; 4.1.1. Motivation; 4.1.2. Notion of<br>characteristic functions; 4.1.3. Levy processes; 4.1.4. Levy-Khintchine |

formula; 4.1.5. Examples of Levy processes; 4.1.6. Variance gamma (VG) process; 4.1.7. Risk neutral measures for Levy models in finance; 4.1.8. Particular Levy processes: Poisson-Brownian model with jumps; 4.1.9. Particular Levy processes: Merton model with jumps; 4.1.10. VaR techniques for Levy processes; 4.2. Copula models and VaR techniques; 4.2.1. Introduction; 4.2.2. Sklar theorem (1959) 4.2.3. Particular case and Frechet bounds 4.2.4. Examples of copula; 4.2.5. The normal copula; 4.2.6. Estimation of copula; 4.2.7. Dependence; 4.2.8. VaR with copula; 4.3. VaR for insurance; 4.3.1. VaR and SCR; 4.3.2. Particular cases; CHAPTER 5. NON-GAUSSIAN FINANCE: SEMI-MARKOV MODELS; 5.1. Introduction; 5.2. Homogeneous semi-Markov process; 5.2.1. Basic definitions; 5.2.2. Basic properties [JAN 09]; 5.2.3. Particular cases of MRP; 5.2.4. Asymptotic behavior of SMP; 5.2.5. Non-homogeneous semi-Markov process; 5.2.6. Discrete-time homogeneous and non-homogeneous semi-Markov processes 5.2.7. Semi-Markov backward processes in discrete time 5.2.8. Semi-Markov backward processes in discrete time; 5.3. Semi-Markov option model; 5.3.1. General model; 5.3.2. Semi-Markov Black-Scholes model; 5.3.3. Numerical application for the semi-Markov Black-Scholes model; 5.4. Semi-Markov VaR models; 5.4.1. The environment semi-Markov VaR (ESMVaR) model; 5.4.2. Numerical applications for the semi-MarkovVaR model; 5.4.3. Semi-Markov extension of the Merton's model; 5.5. The Semi-Markov Monte Carlo Model in a homogeneous environment; 5.5.1. Capital at Risk; 5.5.2. A credit risk example CONCLUSION

---

## Sommario/riassunto

With the impact of the recent financial crises, more attention must be given to new models in finance rejecting "Black-Scholes-Samuelson" assumptions leading to what is called non-Gaussian finance. With the growing importance of Solvency II, Basel II and III regulatory rules for insurance companies and banks, value at risk (VaR) - one of the most popular risk indicator techniques plays a fundamental role in defining appropriate levels of equities. The aim of this book is to show how new VaR techniques can be built more appropriately for a crisis situation. VaR methodology for non-Gauss

---