

1. Record Nr.	UNINA9910145018903321
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Titolo	Copula methods in finance [[electronic resource] /] / Umberto Cherubini, Elisa Luciano, and Walter Vecchiato
Pubbl/distr/stampa	Hoboken, NJ, : John Wiley & Sons, c2004
ISBN	1-118-67333-6 1-280-27169-8 9786610271696 0-470-86345-5
Descrizione fisica	1 online resource (311 p.)
Collana	Wiley finance series
Altri autori (Persone)	LucianoElisa VecchiatoWalter
Disciplina	332/.01/519535
Soggetti	Finance - Mathematical models
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 (p. [281]-287 and index.
Nota di contenuto	Copula Methods in Finance; Contents; Preface; List of Common Symbols and Notations; 1 Derivatives Pricing, Hedging and Risk Management: The State of the Art; 1.1 Introduction; 1.2 Derivative pricing basics: the binomial model; 1.2.1 Replicating portfolios; 1.2.2 No-arbitrage and the risk-neutral probability measure; 1.2.3 No-arbitrage and the objective probability measure; 1.2.4 Discounting under different probability measures; 1.2.5 Multiple states of the world; 1.3 The Black-Scholes model; 1.3.1 Ito's lemma; 1.3.2 Girsanov theorem; 1.3.3 The martingale property; 1.3.4 Digital options 1.4 Interest rate derivatives1.4.1 Affine factor models; 1.4.2 Forward martingale measure; 1.4.3 LIBOR market model; 1.5 Smile and term structure effects of volatility; 1.5.1 Stochastic volatility models; 1.5.2 Local volatility models; 1.5.3 Implied probability; 1.6 Incomplete markets; 1.6.1 Back to utility theory; 1.6.2 Super-hedging strategies; 1.7 Credit risk; 1.7.1 Structural models; 1.7.2 Reduced form models; 1.7.3 Implied default probabilities; 1.7.4 Counterparty risk; 1.8 Copula methods in finance: a primer; 1.8.1 Joint probabilities, marginal probabilities and copula functions 1.8.2 Copula functions duality1.8.3 Examples of copula functions; 1.8.4

Copula functions and market comovements; 1.8.5 Tail dependence; 1.8.6 Equity-linked products; 1.8.7 Credit-linked products; 2 Bivariate Copula Functions; 2.1 Definition and properties; 2.2 Frechet bounds and concordance order; 2.3 Sklar's theorem and the probabilistic interpretation of copulas; 2.3.1 Sklar's theorem; 2.3.2 The subcopula in Sklar's theorem; 2.3.3 Modeling consequences; 2.3.4 Sklar's theorem in financial applications: toward a non-Black-Scholes world; 2.4 Copulas as dependence functions: basic facts
2.4.1 Independence 2.4.2 Comonotonicity; 2.4.3 Monotone transforms and copula invariance; 2.4.4 An application: VaR trade-off; 2.5 Survival copula and joint survival function; 2.5.1 An application: default probability with exogenous shocks; 2.6 Density and canonical representation; 2.7 Bounds for the distribution functions of sum of r.v. s; 2.7.1 An application: VaR bounds; 2.8 Appendix; 3 Market Comovements and Copula Families; 3.1 Measures of association; 3.1.1 Concordance; 3.1.2 Kendall's ; 3.1.3 Spearman's S; 3.1.4 Linear correlation; 3.1.5 Tail dependence
3.1.6 Positive quadrant dependency 3.2 Parametric families of bivariate copulas; 3.2.1 The bivariate Gaussian copula; 3.2.2 The bivariate Student's t copula; 3.2.3 The Frechet family; 3.2.4 Archimedean copulas; 3.2.5 The Marshall-Olkin copula; 4 Multivariate Copulas; 4.1 Definition and basic properties; 4.2 Frechet bounds and concordance order: the multidimensional case; 4.3 Sklar's theorem and the basic probabilistic interpretation: the multidimensional case; 4.3.1 Modeling consequences; 4.4 Survival copula and joint survival function
4.5 Density and canonical representation of a multidimensional copula

Sommario/riassunto

Copula Methods in Finance is the first book to address the mathematics of copula functions illustrated with finance applications. It explains copulas by means of applications to major topics in derivative pricing and credit risk analysis. Examples include pricing of the main exotic derivatives (barrier, basket, rainbow options) as well as risk management issues. Particular focus is given to the pricing of asset-backed securities and basket credit derivative products and the evaluation of counterparty risk in derivative transactions.
