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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 Independence2.4.2 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 dependency3.2 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.