Department of Statistics

MASTER'S THESIS PRESENTATION

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High-Dimensional Copula-Based Distribution with DCC-GARCH Model

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ABSTRACT

Modeling for multivariate distribution of returns on large collections of financial assets has been a very important part of modern risk management and asset allocation. This paper decomposes the dependence between returns into linear and nonlinear components, DCC-GARCH model is used to capture the linear dependence, and a new class of copula is used to capture the nonlinear dependence among the uncorrelated residuals. Maximum composite likelihood estimation is used to overcome the computational problems when estimating the parameter of the new class of copulas, and simulation study is carried out to test the performance of the MCLE method. Finally an empirical analysis using daily returns from S&P 100 index explores the performance of the model.

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