

Heterogeneous Archimedean copula and t-copula with application in credit portfolio modeling

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Abstract

Besides their advantage in modelling tail-dependency, the main drawback of standard non-Gaussian copula is the homogeneity in the tail dependency parameter. Several approaches to solve this are meanwhile developed, hierarchical copula, the grouped t-copula and the heterogeneous t-copula as recently described by Luo and Shevchenko [1]. We will show results from a concrete implementation of a factor model using the later approach based on a two step estimation procedure. In particular the effects on capital allocation will be highlighted. We will also present how this can be extended to a wide class of Archimedean copula, in order to capture heterogeneous tail-dependencies and therefore tail-sensitive capital allocation in credit portfolio models.

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