



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

CHU QI

Department of Statistics
The University of Chicago

A Mixed Canonical Vine Copula Model with Application to
European Stock Indices

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Eckhart 110, 5734 S. University Avenue

ABSTRACT

Pair Copula Constructions (PCC) is a newly developed method to analyze multivariate distributions and build high dimensional dependent models. PCC decomposes general multivariate distribution into products of bivariate copulas and marginal densities, where each bivariate copula can be chosen independently from each other, and the copulas can be chosen independently from the marginal distributions. There are two kinds of regular vine models, the Canonical vine model (C-vine) and the D-vine model, but only C-vine would be introduced in this thesis. We will first introduce the mixed C-vine copula model and talk about parameter estimation methods and copula selection. Then a simulation study of a 6 dimensional C-vine would be performed, confirming modeling method introduced in the first section. Finally, we will apply the mixed C-vine model into to European price indices data from Yahoo.

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