



THE UNIVERSITY OF  
**CHICAGO**

DEPARTMENT OF STATISTICS

## MASTER'S THESIS PRESENTATION

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Copula-based GARCH model - Application on stock and bond returns

MONDAY, April 3, 2023, at 12:00 PM  
Zoom Meeting

### ABSTRACT

Modeling the dependency between asset returns have been a popular issue in finance economic. When the normality assumption fails, it is often simply impossible to specify the multivariate distribution relating two or more return series. In this case, the copula theory is a flexible tool to estimate the joint distribution that allows for skewness in the distribution of asset returns as well as asymmetry in the dependence structure between asset returns. In this paper, we proposed copula-based GARCH models to describe the time-varying dependence structure of returns. Besides, we evaluate the models by portfolio optimization problem under maximum constant relative risk aversion (CRRA) utility framework. In empirical study, we find that copula-based GARCH models yields potentially better economic performance than traditional dynamic conditional correlation (DCC) models.