The demand for an accurate financial risk management involving larger numbers of assets is strong not only in view of the financial crisis of 2007-2009. In particular dependencies among assets have not been captured adequately. While standard multivariate copulas have added some flexibility, this flexibility is insufficient in higher dimensional applications. Vine copulas can fill this gap by benefiting from the rich class of existing bivariate parametric copula families. Exploiting this in combination with GARCH models for margins, we develop a regular vine copula based factor model for asset returns, the Regular Vine Market Sector model, that is motivated by the classical CAPM and shown to be superior to the CAVA model proposed by Heinen and Valdésogo (2009). While the model can also be used to separate the systematic and idiosyncratic risk of specific stocks, we explicitly discuss how vine copula models can be employed for active and passive portfolio management. In particular, Value-at-Risk forecasting and asset allocation are treated in detail. All developed models and methods are used to analyze the Euro Stoxx 50 index, a major market indicator for the Eurozone. Relevant benchmark models such as the popular DCC model and the common Student-t copula are taken into account.

Stichworte: CAPM, multivariate copula, regular vines, simplification, market risk, Value-at-Risk