A Regime switching time-varying copula approach to oil and stock markets dependence: the case of G7 economies

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Abstract. Measuring dependence dynamics between oil and stock markets has attracted special attention from researchers in financial econometrics literature recently. This study aims to investigate the time-varying dependence between individual G7 stock market and Brent crude oil market. The Markov-switching time-varying copula is employed to examine the structural change in the time-varying dependence as well as explain the relationship between them. Our findings show evidence of regime shifts in the dependence structure between stock and oil returns only in United States and France. Moreover, both the Clayton and Gumbel highly outperform the symmetric elliptical copulas, which suggests the asymmetry between oil and stock returns in G7 countries. We also find the positive dependence between oil and stock indices for most cases.