

Supplementary Table 2. The rank-based the KS and the CvM goodness-of-fit tests

These are “blanket” tests in the sense that they involve no parameter tuning or other strategic choices by a researcher. According to Genest & Favre (2007) and to Genest *et al.* (2009), since the empirical copula C_N is entirely non parametric, it is the most appropriate benchmark for testing the null hypothesis that the dependence structure is captured by the parametric copula $C_{N,\theta}$.

The rank-based KS and CvM tests compare the distance between C_N and $C_{N,\theta}$ where the last is an estimate of C_θ under the null of $C = C_\theta$. The distance is defined as $D_N = \sqrt{N}(C_N - C_{N,\theta})$. The Kormogorov-Smirnov statistic is $KS_N = \sup_{u \in [0,1]^2} |D_N(u)|$ and the CvM statistic is $CvM_N = \int_{[0,1]^2} D_N(u)^2 dC_N(u)$. Critical values are obtained by a bootstrap procedure (Genest *et al.*, 2009). Tests based on the KS and the CvM are consistent (*i.e.* if the null is in fact false, then it is rejected with probability 1 as the sample size increases).