Errata

Modeling dependence in finance and insurance: the copula approach

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1. Theorem 4.1 should read correctly:

Theorem 4.1. Let φ be a continuous strictly decreasing function on the interval $(0, 1]$ such that $\varphi(1) = 0$ and $\lim_{z \downarrow 0} \varphi(z) = \infty$, and let φ^{-1} denote its inverse on the interval $[0, \infty)$. If C is a function on the unit n -cube $[0, 1]^n$ with $n \geq 3$, fulfilling the above additive relationship, then C is a copula if and only if φ^{-1} is completely monotonic, i.e.

$$(-1)^k \frac{d^k}{ds^k} \varphi^{-1}(s) \geq 0 \text{ for all } k \in \mathbb{N} \text{ and } s > 0.$$

In this case, we have necessarily $C \succ \Pi$ (in the sense of Definition 3.2).

In fact, for dimension $n = 2$, the situation is a little simpler here since just convexity of φ is sufficient for C being a copula. Also, $C \prec \Pi$ is possible here. For details, see Theorem 4.1.4 in Nelsen [1].

2. The following misprints should be corrected as follows:

The Clayton copula on p. 186, line 8 should read:

$$C(u_1, \dots, u_n) = \left[\sum_{i=1}^n u_i^{-\theta} - n + 1 \right]^{-1/\theta}, \quad \mathbf{u} \in (0, 1]^n, \quad \theta > 0$$

(likewise for the table on the same page, line 19).

The Gumbel copula on p. 186, line 20 should read:

$$\exp \left(- \left\{ \sum_{i=1}^n (-\ln(u_i))^\theta \right\}^{1/\theta} \right), \quad \theta \geq 1.$$

Reference

- [1] Nelsen, R.B.: An Introduction to Copulas. Lecture Notes in Statistics 139, Springer, N.Y. (1999).