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Why Clayton and Gumbel Copulas: A Symmetry-Based Explanation

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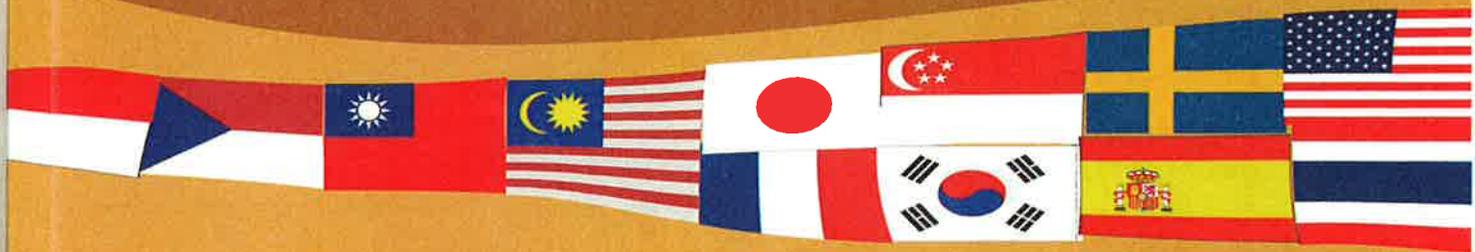
Abstract.

In econometrics, many distributions are non-Gaussian. To describe dependence between non-Gaussian variables, it is usually not sufficient to provide their correlation: it is desirable to also know the corresponding copula. There are many different families of copulas; which family shall we use? In many econometric applications, two families of copulas have been most efficient: the Clayton and the Gumbel copulas. In this paper, we provide a theoretical explanation for this empirical efficiency, by showing that these copulas naturally follow from reasonable symmetry assumptions. This symmetry justification also allows us to provide recommendations about which families of copulas we should use when we need a more accurate description of dependence.

Keywords: Archimedean copulas, econometrics, symmetries

ABSTRACT

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