

A Model-Free Approach to Multivariate Option Pricing

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We propose a novel model-free approach to extract a joint multivariate distribution, which is consistent with options written on individual stocks as well as on various available indices. To do so, we first use the market prices of traded options to infer the risk-neutral marginal distributions for the stocks and the linear combinations given by the indices and then apply a new combinatorial algorithm to find a compatible joint distribution. Armed with the joint distribution, we can price general path-independent multivariate options. This is joint work with Steven Vanduffel (VUB) and Oleg Bondarenko (UIC).