Implied Correlation "Tales": Systemic Risks and Portfolio Selection

(Job Market Paper, Preliminary Version)

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Abstract

Using information from option prices I construct two new measures of dependence between assets and industries, the Jump Tail Implied Correlation and the Tail Correlation Risk Premia. The main contribution of the paper is the construction of a systemic risk factor from daily financial measures using a quantile-regression-based methodology. In this direction, the paper fills the existing gap between downturns in the financial sector and the real economy. I find that this new index performs well to forecast in-sample and out-of-sample quarterly macroeconomic shocks. In addition, I analyze whether the tail risk of the correlation may be priced. I find that for the S&P500 and its sectors there is an ex ante premium to hedge against systemic risks and changes in the aggregate market correlation. Moreover, I provide evidence that the tails of the implied correlation have remarkable predictive power for future stock market returns. Finally, I consider a portfolio choice problem to illustrate the economic gains that arise from constructing portfolio weights with tail correlation measures.

Keywords: Systemic Risks, Extremes, Options data, High-frequency data, Non-parametric estimation, Portfolio Allocation, Jump Tail dependence.

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