

Manipulation-Proof Performance Measure and the Cost of Tail Risk

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Abstract

This paper builds on the seminal Goetzmann, Ingersoll, Spiegel and Welch research on Manipulation-Proof Performance Measures (MPPM), with a different purpose. Manipulation of usual performance measures generally goes through taking risk which is not reflected in the second moment measure of return distribution, variance or volatility. This is particularly relevant for the hedge fund industry.

The MPPM corrects for the impact of tail risk –negative skewness and kurtosis- taken by a fund manager (not necessarily with the explicit aim to manipulate the performance measures). In our paper, we try to quantify, using a Cornish Fisher technology allowing us to control for tail risk, the impact of such risk on the MPPM.

In that framework, we find that the MPPM effectively does impose a penalty on tail risk. This penalty increases nearly linearly with return kurtosis and return negative skewness. The size of the penalty is rather benign when return volatility is low or the risk parameter is low. It increases substantially for high volatilities and/or high risk parameters.

JEL classification: C02, G11, G12, G21

Key Words: Fund performance, Risk, Tail Risk, Cornish Fisher, Skewness, Kurtosis