

# Optimal Risk-Adjusted Portfolios with Multiple Managers

*Achieving the best correlation-adjusted performance.*

Arun S. Muralidhar

The goal of an institutional investor selecting investment managers is to identify the best-performing managers of the many available for any asset class, and to ensure that the manager (or a mixture of managers) outperforms the benchmark on a risk-adjusted basis. In Muralidhar [2000] I provide a methodology to measure the risk-adjusted performance of a manager that permits effective ranking among peers, and I demonstrate how optimal portfolios can be created to appropriately adjust for risk. I also demonstrate how measures such as the information ratio, the Sharpe [1994] ratio, or the Modigliani and Modigliani [1997] measure may be inappropriate to adjust for risk. My measure accounts for differences in standard deviations and the correlation between portfolios and the benchmark, as well as the fact that institutional investors have a target relative risk.

Correlations between investment managers and the benchmarks they are measured against and correlations among investment managers are important for two reasons—as a forward-looking risk measure, and as a measure of covariance with other assets for optimal portfolio selection. My measure adjusts for differences in standard deviations and correlations, and provides rankings of individual investment managers that are different from those produced by other techniques, but consistent with ranking managers based on confidence in skill. Further, the technique facilitates portfolio construction to achieve investors' objectives by combining an optimal fraction of the risk-free asset, the benchmark, and the risky investment manager.

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