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An Examination of Resampled Portfolio Efficiency™: A Comment

by

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Abstract

Dr. Michaud responds to the Fletcher and Hillier article (2001) that compared the performance of mean variance efficient asset allocations to resampled efficient asset allocations by means of a back test.

Some observations on the article by Jonathan Fletcher and Joe Hillier (September/ October 2001) may be of general interest. Using various models of expected return and performance measures, the authors compare the performance of mean–variance-efficient asset allocations with the performance of resampled-efficient asset allocations (Michaud 1998, Ch. 6).[1] Their conclusions, which result from a back test of historical return data, are that resampled efficiency nearly always improves Sharpe ratios and returns but that the improvements are not statistically significant. A casual reader might conclude that resampled-efficiency improvements are not of investment significance.

First, a back test provides no reliable information. A "good" strategy may perform poorly and a "poor" strategy may perform well in any given period. This is why I used simulation methods to prove the superiority of resampled efficiency (Michaud 1998, Ch. 6). A simulation study is a controlled experiment to reliably assess how a strategy performs on average. Second, Fletcher and Hillier's data and models of expected returns have little predictability. In investment practice, asset managers typically use far more sophisticated models of expected return. The proper interpretation of the authors' study is that it was not a test of the relative merits of resampled efficiency but was largely a metric of the predictive content of their data.[2]

Even in the narrow context of their study, however, if resampled efficiency is nearly always superior, a simple sign test may indicate significance. In addition, for active managers, reliable marginal performance improvements relative to peers often have investment significance.

The authors' focus solely on performance enhancement is unfortunate and ignores the many important benefits of resampled efficiency in investment practice, including enhancements in optimized portfolio marketability, more effective trading, more stability, and increased productivity. The Fletcher–Hillier article is an interesting examination of important investment issues, but their back test results are unreliable and their conclusions are likely to be misleading for many.

References

Markowitz, H. 1991. *Portfolio Selection: Efficient Diversification of Investments*. 2nd ed. Cambridge, MA: Blackwell[originally published by Wiley, 1959.

Michaud, R. 1998. *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*. New York, Oxford University Press; originally published by the Harvard Business School Press.

[1] Resampled efficiency is a U.S.-patented protected procedure (December 1999, # 6,003,018). Worldwide patents pending. New Frontier Advisors, LLC is the exclusive worldwide licensee.

[2] A back test may also be useful for calibrating optimization parameters.