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STRATEGIES; Predicting the Path of a Submarine (or a Mutual Fund)

By MARK HULBERT, Hulbert Financial Digest

RESEARCHERS at Yale appear to have solved a big problem for mutual fund rating systems. In doing so, the research team may have also found a better way to pick winning stock funds.

The rating problem has to do with the classification and evaluation of funds that don't stick to a single investment style. The challenge is significant because most funds change styles at one time or another. Say a fund's primary investments, at some point in the past, shifted to small-capitalization from large-capitalization stocks. What is the best way to classify what its investment approach has been?

Virtually all major rating systems have simply placed funds into whatever peer group seems most similar, based on the most recent report of the fund's investment holdings. The systems then make statistical comparisons that assume that the funds have never deviated from that category. A fund in the small-cap category, for example, is assumed to have invested only in small-cap stocks even if, in the past, it has often held a big portion of large-cap shares.

At least since the mid 1980's, researchers have known that these classification difficulties lead to skewed judgments about the performance of funds that change their investment styles.

The Yale researchers -- Matthew Spiegel, a finance professor, Harry Mamaysky, an assistant professor of finance, and Hong Zhang, a doctoral fellow in finance -- believe that they have solved this problem. Their work, which has circulated for several months in academic circles as a working paper, is at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=389740.

The researchers relied on a statistical tool that has primarily been used in navigation and rarely in investing. It is known as the Kalman Filter, named for Rudolf E. Kalman, an emeritus professor of engineering at the Swiss Federal Institute of Technology in Zurich. Mr. Kalman introduced his technique in 1960 in research supported by a grant from the United States Air Force, and the technique has been used to track moving targets like submarines.

Imagine trying to predict the direction of a submarine, and how long it will go in that direction, based only on the location and time of past sightings. The Kalman Filter translates the information in those sightings into a single forecast and updates that forecast when the submarine is seen again.

In some ways, services that rate mutual funds face similar problems. They do not know where a mutual fund manager is taking his portfolio at any given moment. But they do know how the

portfolio is performing. The Kalman Filter uses a fund's raw returns to continuously update a forecast of the fund's future performance.

The filter does that by constructing a unique benchmark for each fund, based on the returns of the fund and those of a series of conventional stock market style indexes. The filter adjusts the fund's individual benchmark based on a probability analysis of the shifts that the fund is making among various investing styles. The researchers rate a fund highly only if it has significantly outperformed its own benchmark.

To test their application of the filter, the researchers calculated the return of a portfolio that invested each month in the five funds that outperformed their respective benchmarks by the greatest amount over the previous five years. (That means the portfolio does not necessarily own the five funds with the largest absolute returns.) From January 1993 through 2002, the portfolio beat the Wilshire 5000 by 5.9 percentage points a year, on average. The portfolio also outperformed all other rating systems studied by the researchers.

Professor Spiegel is confident enough in this system to have a Web site that updates his list of the highest-rated funds. The professor, by the way, earns nothing from the site. As of March 31, the five funds that had outperformed their benchmarks by the largest amounts over the previous five years were IMS Capital Value, T. Rowe Price Health Sciences, Needham Growth, Wasatch Ultra Growth, and Smith Barney Aggressive Growth.

CAPTIONS: Chart: "Top of the Heap"
A portfolio of the top mutual funds, as picked monthly by a new rating system, outperformed the stock market from 1993 through 2002.

Graph tracks portfolio chosen by new rating system (before loads or redemption fees) and Wilshire 5000 index from 1993 to 2002.

(Source: Matthew Siegel, Harry Mamaysky and Hong Zhang [Yale University])