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CAPITAL MANAGEMENT, INC.

A Study by Tom Basso

➤ **The Value Added of Asset Allocation Combined with Rebalancing**

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The Value Added of Asset Allocation Combined with Rebalancing

Editor's Comment:

When looking at single manager, multi-strategy funds, investors tend to want to “cherry pick” the strategies, selecting the one or two strategies that appear to be most favorable to them. What they miss in doing that is the value added by the allocation and rebalancing process amongst the various strategies. This research looks at a fixed set of various strategies and attempts to quantify some of the advantages added by a single manager, multi-strategy fund beyond just the strategies themselves.

Thomas F. Basso
CEO, Trendstat[®] Capital Management, Inc.
May 12, 2000

Why deal with the hassle of an asset allocation strategy and rebalancing?

Every month we receive faxes, emails and calls from various clients adding, withdrawing and reallocating their investments with us. It's a lot of work for both our clients and us. One of our programs is really a program-of-programs. Inside there are five distinct strategies, each with its own return-to-risk profiles, margin requirement, and personality. This challenges us with the same issue our clients have: How much to allocate to each investment, and how often should we rebalance the allocations? Our goal at Trendstat is to improve return-to-risk ratios with these concepts, so I tested some of the aspects of managing the allocations in this study.

Background on the Study:

First, I needed a base case, so I took all 5 of the strategies we use and combined them together 20% each, with no rebalancing and allowed them to individually produce profits and losses over the 86 months in which we had data. I then structured 3 additional cases. First I looked at staying with 20% in each strategy, but simply rebalance it back to 20% each at the end of every month. This concept has been called a "Robin Hood" asset allocation approach as it takes from the hot investment (the rich) and gives to the cold investment (the poor). I published a research paper on this concept back in June 1994 in MAR.

Next, I used our asset allocation strategy, based on the inverse of that investment's extreme volatility over any 20-day period in history. I've done studies internally that showed this to be more robust than traditional volatility based allocation schemes. This is the way we currently allocate our flagship program-of-programs.

Finally, I combined rebalancing and the extreme volatility concepts together to determine the effect of having both in place. I used many standard measures of returns, risk and return-to-risk to analyze the cases amongst themselves.

Results of the Study:

I expected the base case to have a higher return and risk potential, since faster moving, successful strategies would grab a larger share of the portfolio in later years, due to not rebalancing the portfolio. This came through in the best month and the best and worst 12-month returns, with the base case receiving the best results for these statistics.

Rebalancing improved on the base case in every measure of return-to-risk and every measure of risk. This strategy also improved the percent of the months that were profitable over the period. Rebalancing the portfolio also produced the best annualized return over the period of any of the cases tested. It just makes good sense to keep the portfolio allocated the way you designed it to be allocated, even if it is equally weighted, as in this case.

Using something better than equally weighting the portfolio is something all investors and fund-of-funds managers try to do. We have found some success using extreme volatility to set our allocations, since it robustly deals with those trying times where markets move with extreme volatility and large profits or

losses can be had. This case presumed that we set the portfolio based on extreme volatility, then left it to float from there, with no rebalancing.

Table 1

Various Methods of Allocation and Rebalancing the Portfolio

Bold-faced numbers highlight the best result across all cases.

	Base Case	Rebalancing	Extreme Vol.	Both Concepts
Overall %	+17.42%	+17.83%	+16.61%	+17.25%
Max Drawdown	-11.73%	- 9.91%	- 8.57%	- 8.09%
Best Month	+12.18%	+11.64%	+11.36%	+10.62
Worst Month	- 9.08%	- 8.87%	- 7.87%	- 7.91%
St.Dev.Mo.%	4.17%	4.00%	3.68%	3.59%
Return/Max.DD	1.48	1.80	1.94	2.13
Return/St.Dev	4.18	4.46	4.52	4.80
Best 12 Months	+41.21%	+40.12%	+40.47%	+38.55%
Worst 12 Months	0.98%	- 1.31%	- 2.87%	- 3.47%
Sortino Ratio (0%)	1.88	2.00	2.01	2.16
Sharpe Ratio	1.26	1.31	1.26	1.32
% of the Mo. Profitable	65.1%	67.4%	67.4%	68.6%

Calculations used above:

Sortino Ratio = Annualized return/ Annualized losing months only

Sharpe Ratio = Annualized (monthly return – monthly T-Bill rate)/standard deviation of all rolling 12 month periods

This method also improved on every measure of return-to-risk except the Sharpe ratio and increased the percent of the months that were profitable over the base case.

Finally, I combined the asset allocation strategy and rebalanced it to the extreme volatility based target allocations each month. This is the way we run our program-of-programs. With this case, we obtained the highest return-to-risk of any of the cases, the lowest risk measures of almost all of the cases and returns that were just slightly lower. The percent of the months showing a profit was the highest of all the cases.

What does this show us:

The first thing this study did was reaffirm my belief that a reasonable asset allocation strategy performs better than just throwing together an equally weighted portfolio. It also showed that rebalancing the portfolio consistently improves the return-to-risk ratios. The combination of the two is even more powerful and is clearly adding value to the overall portfolio.

Most investors and fund-of-funds managers have an allocation strategy, even if it's discretionary or arbitrary. However, in my experience as an investment manager, not all of our clients rebalance their portfolios as often as they could or should. This study helps provide investors with the motivation to use allocation and rebalancing techniques to help their clients' return-to-risk.

The second finding the study points to is the justification for individual investment managers to create more single manager, multi-strategy funds. The fund-of-funds, pool operators and family offices have known for years that diversifying their portfolios improved their return-to-risk ratios. However, one disadvantage that those investors have is that they have to allocate to commercially available strategies. That eliminates many strategies that are capacity limited, have minimums that are higher than the investor can afford or have such strange profit/loss profiles that the manager can't or doesn't offer it commercially.

The individual investment managers have no such limitation. They can design any number of strategies designed to diversify a single manager, multi-strategy program with little regard for what potential clients think about it. Their goal in the design stage of a multi-strategy fund is to combine together multiple strategies that they feel will deliver the best return to risk they can provide their clients. By developing sensible strategies, allocating to them with a reasonable plan and rebalancing them back to the targets frequently, the individual manager can definitely add value to the overall results, delivering the best return-to-risk possible from those strategies.

