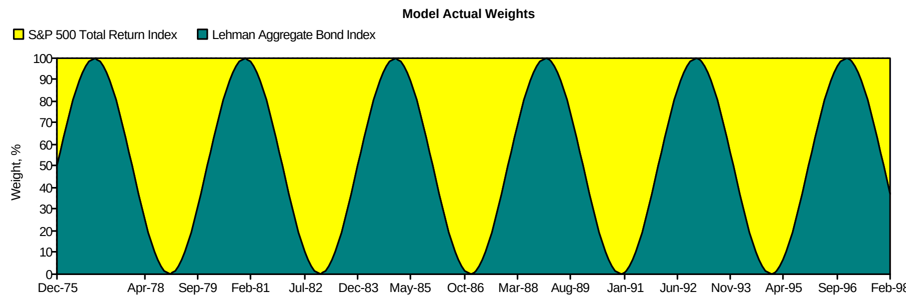
MPI STYLUS 4.0 FEATURE HIGHLIGHTS

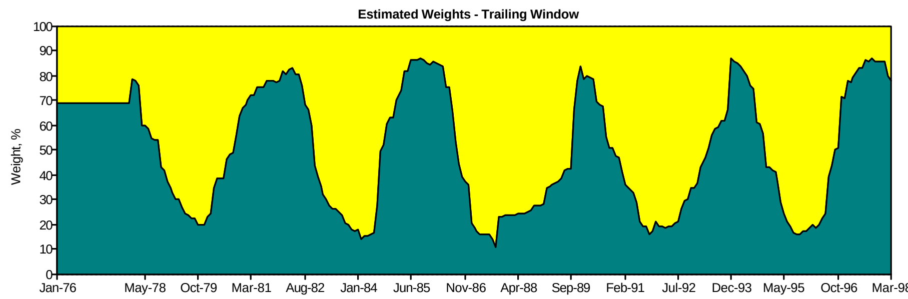
Model

To demonstrate the effectiveness of various methods of estimating effective mix, or style exposure, a simple two asset model was constructed made up of stocks and bonds (represented by the S&P 500 and the Lehman Aggregate, respectively). An initial 50/50 mix was changed over time as shown on the chart to the right and weighted returns were calculated in each monthly data point. The resulting return time series was the basis for testing the adequacy of each estimation method.



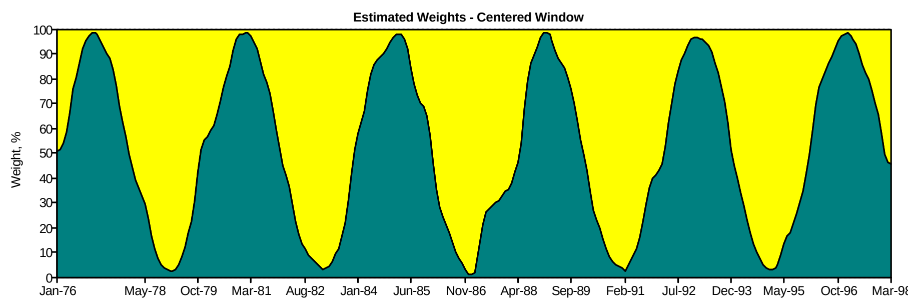
Trailing Window

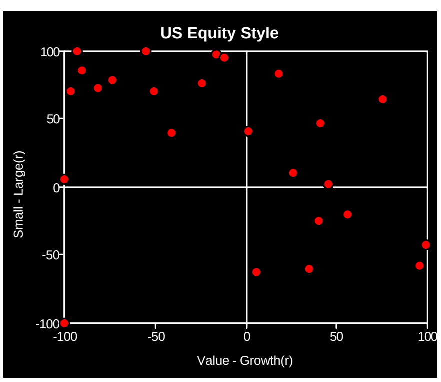
The next step was to capture the dynamic of the effective mix or style. For this purpose, the overall estimate interval was segmented into smaller, overlapping (rolling) windows. Estimations of style were made in each window and the answer was posted at the last point in each. Two drawbacks of this methodology are readily apparent (see chart to the right). First, there is a pronounced lag in depicting change, which is roughly half the size of the estimation window. Second, there is substantial "noise" in the data. The noise increases the error of the estimate and negates the value of inferred selection return.



Centered Window

Developed at MPI, the method of *locally-weighted regression (LWR)* is a significant improvement over the trailing window approach. The point of estimate is placed in the *center* of the regression window and weights are applied to returns so that the observations closer to the estimation point are getting higher weight than those at the extremes of the window. The effect is a reduction in lag in sensing change and noise control. The method proved more effective than the weighted trailing window approach in the analysis of multi-asset portfolios and it excels in the handling of high frequency data (weekly, daily).



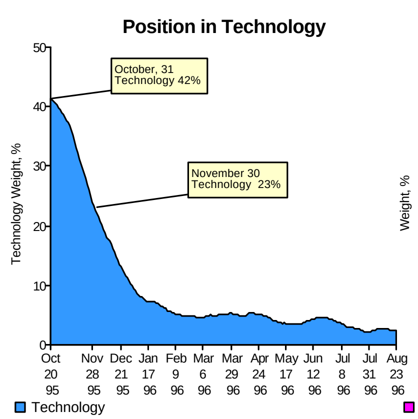


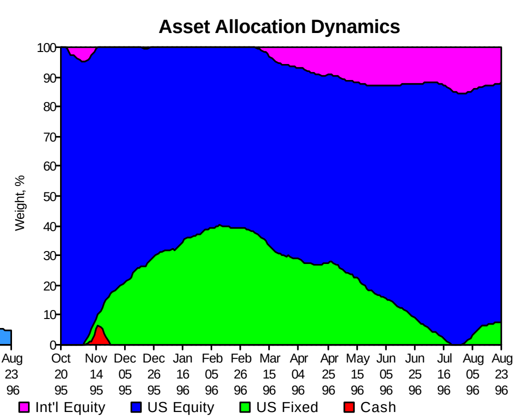
High Frequency Data

The two charts below show what really happened in Magellan Fund in the fall of 1995 - 1996. The massive technology sell-off and bond accumulation could have been captured as they were unfolding using locally weighted regression and daily returns. The precision of estimation is impressive given the actual numbers in the following report published over two months after the fact:

BOSTON, The Reuters European Business Report : Fidelity Investment's Magellan Fund, whose moves are closely watched by Wall Street because of its immense size, cut its holdings in technology stocks sharply in November, just before a big selloff in the sector. The $50 billion mutual fund, the nation's largest, cut its stake in technology stocks to 24.5 percent of its holdings at the end of November from 43.2 percent at the end of October, according to its monthly mutual fund guide. ``The fact that he got out of it without disturbing the market is amazing. He did it ... without anybody knowing," said William Dougherty, president of Kanon Bloch Carre, a retirement plan consulting firm, who closely follows Magellan. [01-11-96 at 17:58 EST, Copyright 1996, Reuters America Inc.]

Returns-based style analysis based on high frequency returns and proper estimation methodology can support tasks such as compliance and "due diligence" monitoring as well as support the portfolio management process.





Prospector

Prospector, a powerful multi-dimensional screening and visual data exploration tool is a part of the **mpi Stylus Pro** application suite. It allows one to perform complex analyses on thousands of products. This tool is crucial in the following applications: investment product search, product positioning, peer selection and exploration, and research.

Integrator

This entire report has been created using Integrator. Integrator is yet another module within **mpi Stylus Pro 4.0**. It allows one to combine the results of various Stylus and Prospector studies in a single study that is dynamically linked to the original ones. Using Integrator you can automate repetitive tasks (batch) in both computations and reporting.

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