

**SHENANDOAH
ASSET
MANAGEMENT, L.L.C.**
alternative investment strategies

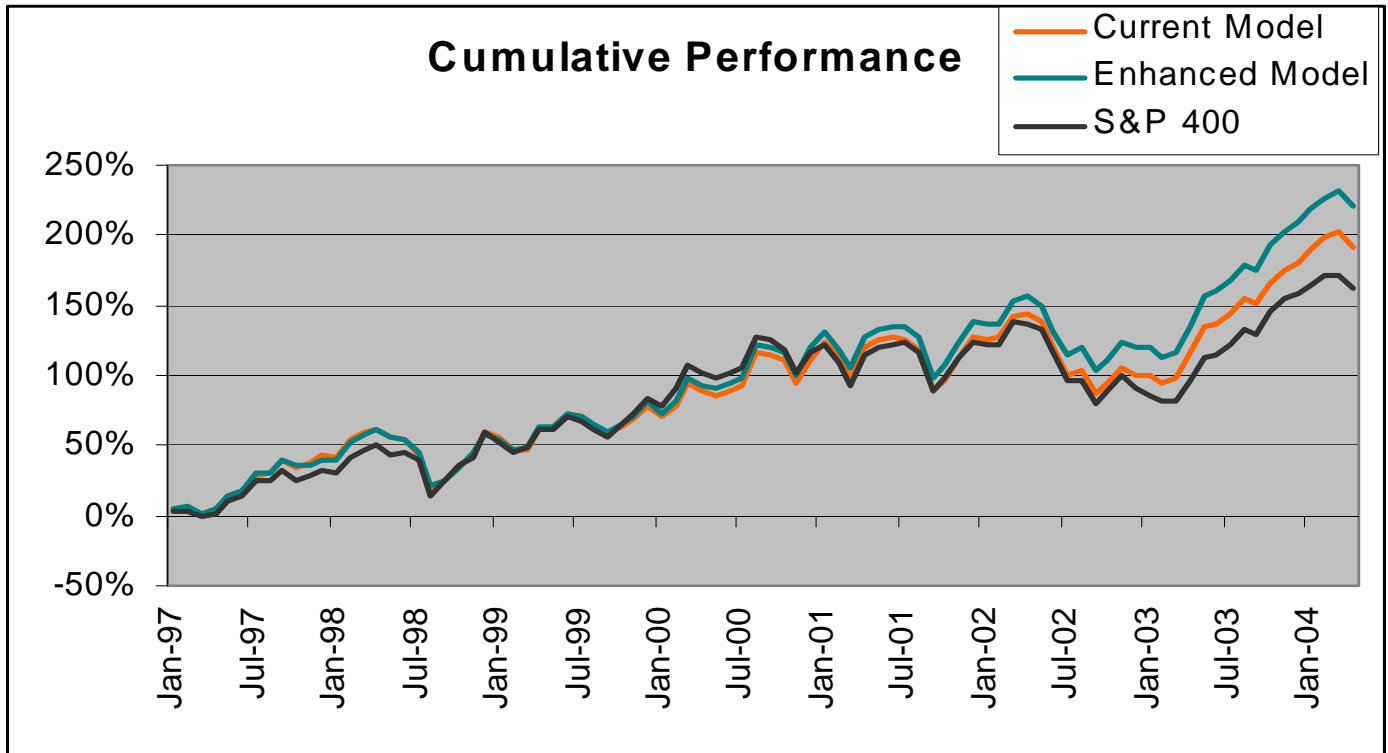
Research Brief
July, 2004

Summary

Shenandoah's quantitative investment discipline is based on purely fundamental factors. Continuous research remains at the heart of our process.

- ◆ The Shenandoah Midcap strategy offers excess return potential (2-4% p.a.) in a tightly risk-controlled environment (tracking error < 4%). Return and tracking error targets can be adjusted to reflect the needs of individual clients.
- ◆ **Style consistency:** While our research effort is constant, all improvements should be viewed as enhancements to our methodology. Our process continues to be driven by the combination of earnings, cashflow, valuation and insider transactions.
- ◆ **Insider Transaction Model:** We continue to build on our previous research regarding the Insider Transaction model (previous research published in December, 2003). Our goal has been to enhance this model by developing a proprietary algorithm that compares current insider transaction data to historical patterns on a stock-by-stock basis.
- ◆ Prior research enhancements (December, 2003) reduced the possibility of false buy or sell signals driven by insider transactions by viewing each stock's Insider profile in the context of the longer-term trading activity of insiders. The current project was designed to quantitatively focus our attention on new and actionable insider buying/selling.
 - Note: Prior to this research, Shenandoah only used the Insider model in combination with the Earnings model to develop our proprietary Opt E/I measure. The Opt E/I calculation methodology remains unchanged.
 - The enhancement adds a new component to our alpha scoring process: Insider Acceleration.
 - Insider Acceleration equals the difference between the current and the historical average Insider scores for each stock.
 - Information Coefficient = 0.02+
 - Each stock's expected alpha is adjusted based on Insider Acceleration.
 - The enhancement further focuses our attention (and buy/sell discipline) on new information, i.e., new and relevant insider buying/selling.
- ◆ Results: This model enhancement adds over 100 bps p.a. to the historical (backtested) returns of the Midcap strategy! The volatility of excess returns is also decreased.

Insider Transaction Model Enhancement



- ◆ **Research Scope:** The goal is to enhance the performance of the Insider model by identifying companies with actionable buying/selling by insiders. Insider Acceleration offers a consistent method of identifying stocks where insiders are acting in a manner that is significantly different than historical norms.
- ◆ **Market Profile Theorems (MPT) Insider Transaction Model:** MPT monitors all insider transactions registered with the SEC; data is cleaned, seasonally-adjusted and compared to a historical matrix for each company. Factors include: Rank of insider, trade date and size; open-market transactions are more heavily weighted than options trades.
- ◆ **Shenandoah Insider Transaction Model:** Shenandoah buys data from multiple external sources but maintains an internal research effort in order to use each factor in a more efficient manner within our process. With respect to the Insider model, we have been able to enhance the model’s performance by further adjusting, or normalizing, insider transaction data in an effort to focus on “abnormal” trades. Our enhancement improves the performance of the Insider model significantly.

	Old SAM Midcap	Enhanced Midcap	S&P 400
Avg Monthly Rtn	1.4%	1.5%	1.3%
STDEV (monthly)	5.6%	5.4%	5.6%
Ratio	0.25	0.27	0.23
% months > 0% rtn	63%	63%	61%
Ann Rtn	15.7%	17.2%	14.1%
STDEV (ann.)	19.3%	18.7%	19.4%

- ◆ **Notes:** All returns above include transaction cost reductions; other than the inclusion of Insider Acceleration, all parameters of the existing Midcap methodology are unchanged, including turnover and risk control constraints. The backtest covers the period from 1/1997 to present.