



## Research Note

6/7/99

### Overview

Existing growth and value indices have been criticized for failing to deliver meaningful differences in return from the broad market. OakBrook Investments has found that the ability of indices to distinguish growth stocks from value stocks can be substantially improved by combining the familiar growth vs. value classification with a new variable vs. stable classification based on past return stability and trading volume. This powerful extension of the traditional growth vs. value framework also enhances the ability of indices to distinguish growth managers from value managers when used in a return based style analysis and provides investors with two new investment tools: Stable and Variable Equity Indices.

### OakBrook's Approach

The standard approach to style-based investing has been to categorize firms according to their capitalization or valuation. Investors are familiar with the distinctions between small-cap and large-cap stocks, as well as growth and value. Drawing on our experience with large-cap firms, we have identified an investment factor that is as effective as valuation in explaining the performance of large-cap stocks. This factor is the stability of a stock's past returns relative to other stocks. Focusing on the stocks of the S&P 500, we combined valuation and stability measures to create four basic indices with distinct performance patterns over a market cycle. Price to earnings ratios and price to book ratios, modified to eliminate accounting biases, were used to classify firms as growth or value. Past returns and trading volume were used to classify firms as stable or variable. Only those stocks with strong characteristics on both axes, value vs. growth and stable vs. variable, were assigned to one of our four basic indices: Variable Growth, Stable Growth, Variable Value or Stable Value.

### Better Growth and Value Indices

There are several benefits to this new approach to style based investing. The OakBrook Style Indices deliver meaningful return differentials from the broad market unlike many of the leading growth and value indices.

As an example, consider the OakBrook Variable Growth Index. From 1985 to 1998, the annual tracking error of the Variable Growth Index relative to the S&P 500 was 7.94%, more than twice as large as the 3.32% tracking error of the S&P/BARRA Growth Index relative to the S&P 500.\* The larger size of OakBrook's tracking error reflects a sharper focus on growth stocks. This is illustrated by the strong performance of the OakBrook

---

\* The OakBrook Style Index results reported on this and subsequent pages are based on simulated portfolio holdings and returns calculated by applying OakBrook's proprietary computer model. The results do not represent the actual performance of any funds managed by OakBrook Investments, LLC. The returns used for these indices include price changes plus dividends paid in cash. Index results include re-investment of dividends and other earnings and do not reflect sales charges. The indices are not managed portfolios. As with any study that is conducted after the fact, results are subject to back testing bias that can inflate returns.



Variable Growth Index in periods where the rate of earnings growth is low, an environment in which growth indices tend to out perform. Between 1985 and 1998, the OakBrook Variable Growth Index out performed the S&P 500 by an average of 1.35% during quarters where the reported rate of year over year earnings growth was below 8%. Over the same quarters, S&P/BARRA Growth Index out performed the S&P 500 by an average of 0.62% per quarter, Wilshire Growth Index out performed the S&P by 0.61%, and Russell Growth Index out performed by 0.45%.

Similar results follow for value stocks, with the OakBrook Stable Value Index providing better differentiation relative to the S&P 500 than leading value indices and also out performing those same indices in the high earnings growth environments where value stocks deliver their best returns relative to the S&P 500.

### **Better Identification of Manager Style**

In addition to their use as investment vehicles, style indices may be used to objectively determine manager style. Investors use style analysis to understand a manager's return history as well as to determine whether or not a manager has followed that style consistently over time. OakBrook's Style Indices can be used to enhance the analysis and improve the understanding derived from that analysis.

One method of style analysis renowned for its speed, simplicity, and accuracy was developed by Nobel Laureate William F. Sharpe. His return-based style analysis theory asserts that one can classify a manager by fitting a straight line that describes the manager's returns as a combination of various benchmark indices. This can be done using the regression commands found in most spreadsheet programs or by using specialized software packages.

Using the Zephyr Associates Style Advisor software, we have constructed style evaluations that illustrate the advantages of using benchmark indices that classify firms on the basis of OakBrook's new Variable and Stable Indices. Chart 1 shows the results of a style analysis of two managers using the Russell Indices: Russell 1000 Growth, Russell 1000 Value, Russell 2000 Growth and Russell 2000 Value. Using these indices, it is not possible to determine whether a "low risk" growth manager is truly low risk or whether a Growth-At-a-Reasonable-Price (GARP) manager is following a growth style. Chart 2 displays a style analysis for the same two managers using the OakBrook Style Indices. Because this set of indices classifies stocks on the basis of stability rather than capitalization, we can see that the "low risk" manager is actually high risk and the GARP manager does in fact follow a growth style.



Chart 1  
Style Analysis

First Quarter 1994 - Fourth Quarter 1998

Zephyr: StyleADVISOR: OakBrook Investments, LLC

## Manager Style Using Russell Generic Corners

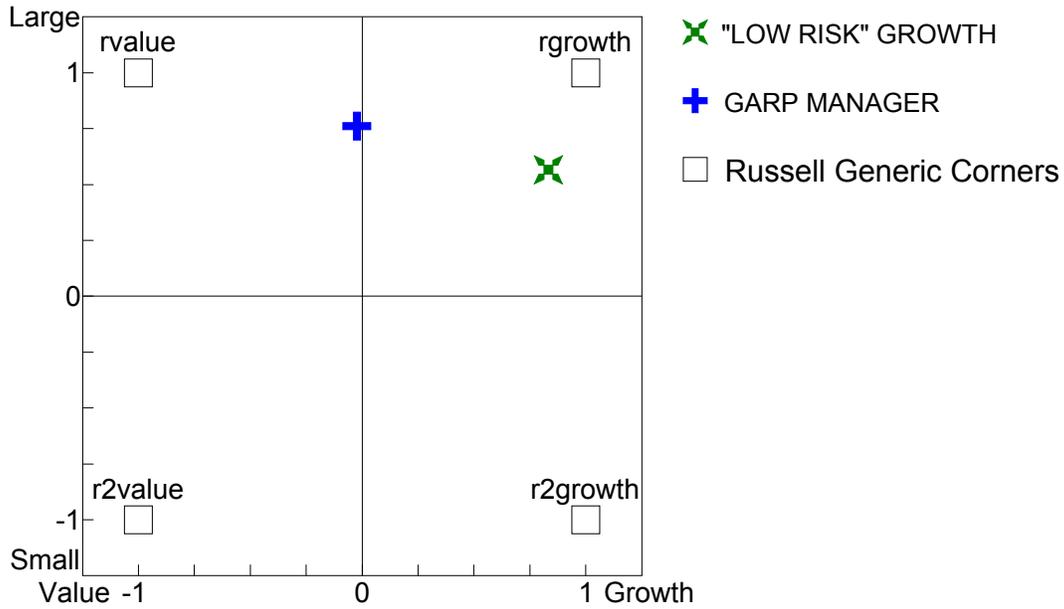
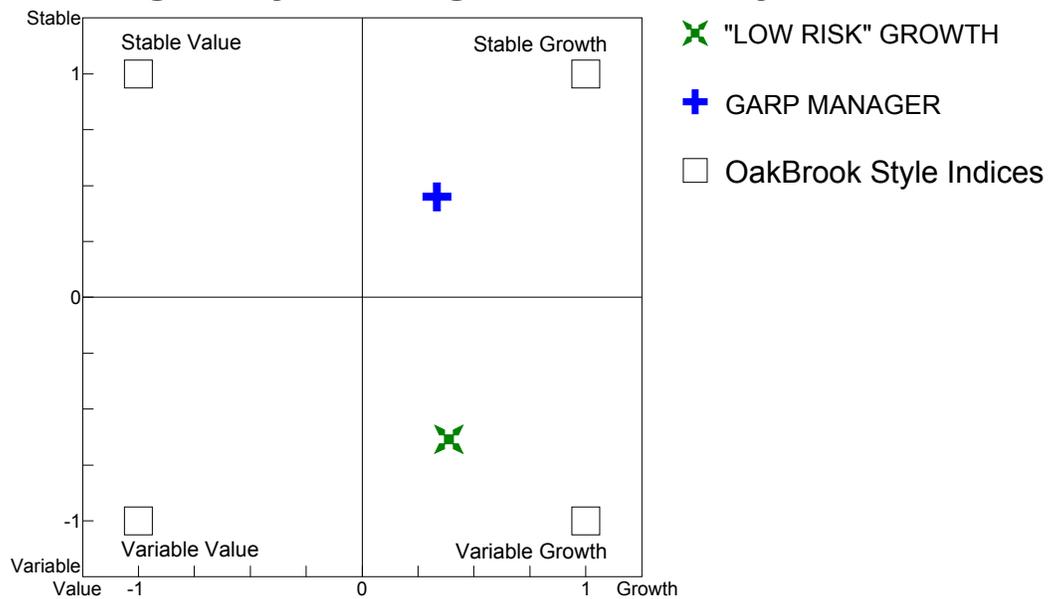


Chart 2  
Chart 2  
Style Analysis

First Quarter 1994 - Fourth Quarter 1998

Zephyr: StyleADVISOR: OakBrook Investments, LLC

## Manager Style Using OakBrook Style Indices



**Powerful New Indices: Stable and Variable**



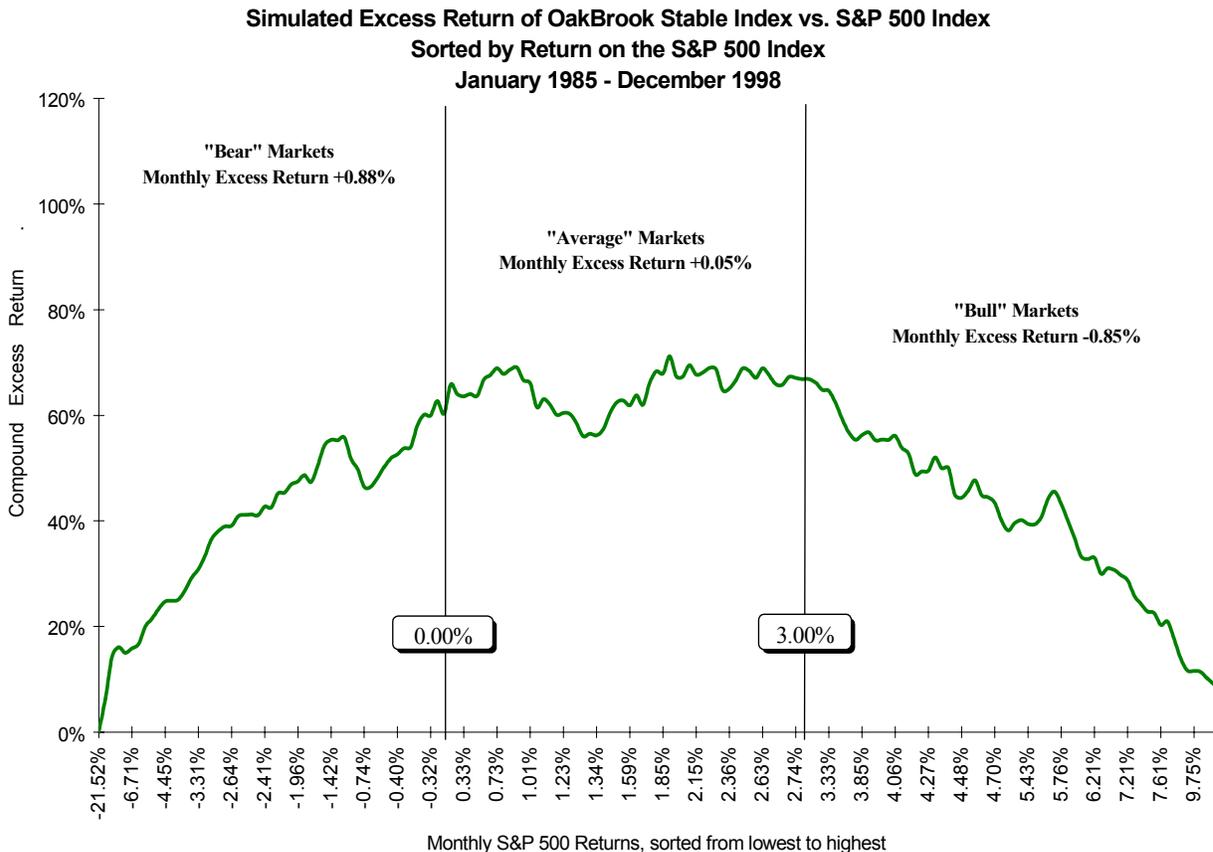
The importance of the stable and variable classification goes beyond improving the ability of indices to isolate growth and value behavior. They are important investment categories in their own right. As can be seen in Table 1, the annual tracking error of the Stable Index relative to the Variable Index is larger than the annual tracking error of growth vs. value for leading index providers.

Table 1  
**Differences in Return Between Various Style Indices**  
**January, 1985 – December, 1998**

<u>Index Pair</u>	<u>Annual Tracking Error</u>
OakBrook Stable vs. Variable	9.89%
Russell Growth vs. Value	6.87%
S&P/BARRA Growth vs. Value	6.77%
Wilshire Growth vs. Value	9.07%

The Stable Index has strong defensive properties. In months between January 1985 and December of 1998 when the S&P 500 return was negative, the simulated OakBrook Stable Index outperformed the S&P 500 by an average of 0.88%.\* This is shown in Chart 3, which displays the cumulative excess return of the Stable Index when observations are sorted by the return on the S&P 500 rather than chronological order.

Chart 3

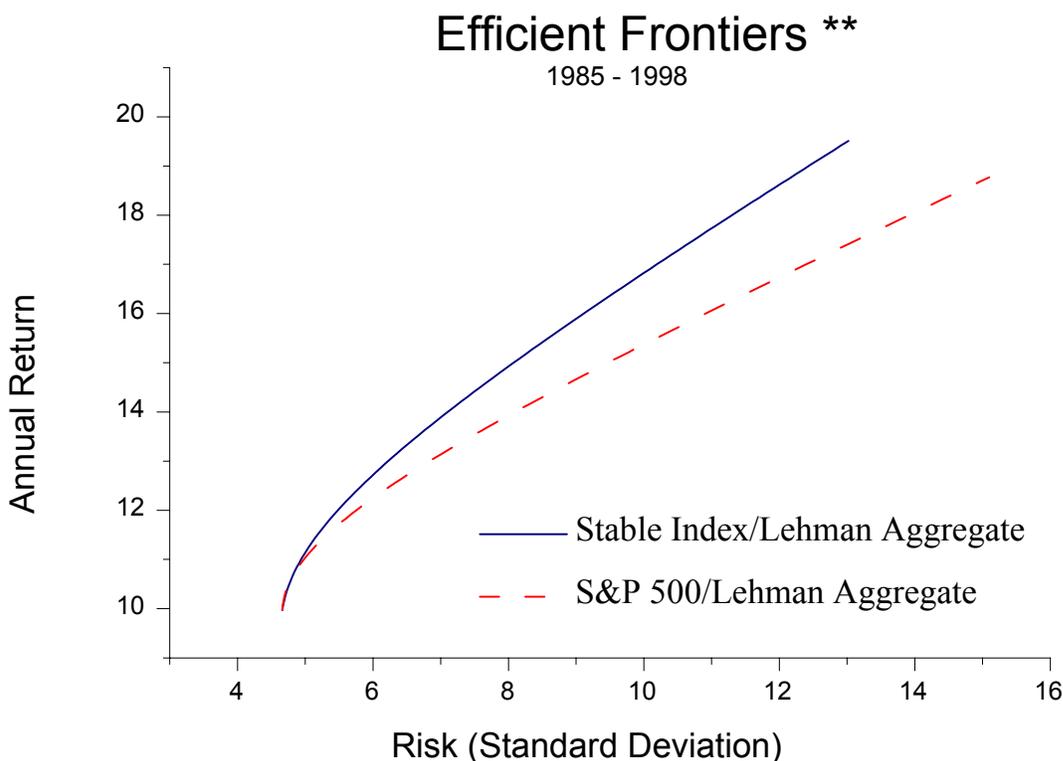




## Better Risk vs. Return Characteristics

Because of the OakBrook Stable Index's excellent defensive properties, substituting the OakBrook Stable Index for the S&P 500 can lower the overall risk of a balanced portfolio without sacrificing long run return. This is shown in Chart 4, which displays the risk/return combinations that might have been achieved for portfolios combining the OakBrook Stable Index and Lehman Aggregate Bond Index (solid line) and for portfolios combining the S&P 500 Index and the Lehman Aggregate Index (dashed line). Moving from left to right along either curve, potential risk and return increase as equity exposure is raised from 0 to 100%. As you compare the solid line with the dashed line, it becomes apparent that at each level of risk the solid line provides a greater level of return. Alternatively, at each return level, the solid line provides the same return at a lower level of risk. Clearly, in a balanced portfolio, the OakBrook Stable Index can be a useful tool to enhance return without increasing overall portfolio risk.

Chart 4



\*\* Simulated returns for portfolios combining the OakBrook Stable Index or the S&P 500 Index with the Lehman Aggregate Bond Index. The simulated returns were calculated using the Zephyr Asset Allocator and monthly observations of the returns on the three indices from January 1985 through December 1998. The S&P 500 Index is a capitalization-weighted index of 500 stocks representing all major industries. The index serves as a proxy for the overall stock market, especially mid to large-capitalization stocks, which are represented in the selected portfolios. The return used for this index includes price changes plus dividends paid in cash. Index results include reinvestment of dividends and other earnings and do not reflect sales charges. The index is not a managed portfolio. The Lehman Aggregate Bond Index is an index of domestic bonds with par values greater than \$100 million. The index serves as a proxy for the overall bond market. The return used for this index includes price changes plus accrued interest. Index results include reinvestment of interest and other earnings and do not reflect sales charges. The index is not a managed portfolio.

Although the statements of fact in this report have been obtained from and are based upon sources that we believe to be reliable, we do not guarantee their accuracy, and any such information may be incomplete or condensed. All opinions and estimates included in this report constitute our judgement as of the date of this report and are subject to change without notice. This report is for informational purposes only and is not intended as an offer or solicitation with respect to the purchase or sale of any security.