



## **Adding a Style Tilt to an Index Portfolio**

**June 25, 2000**

### Introduction

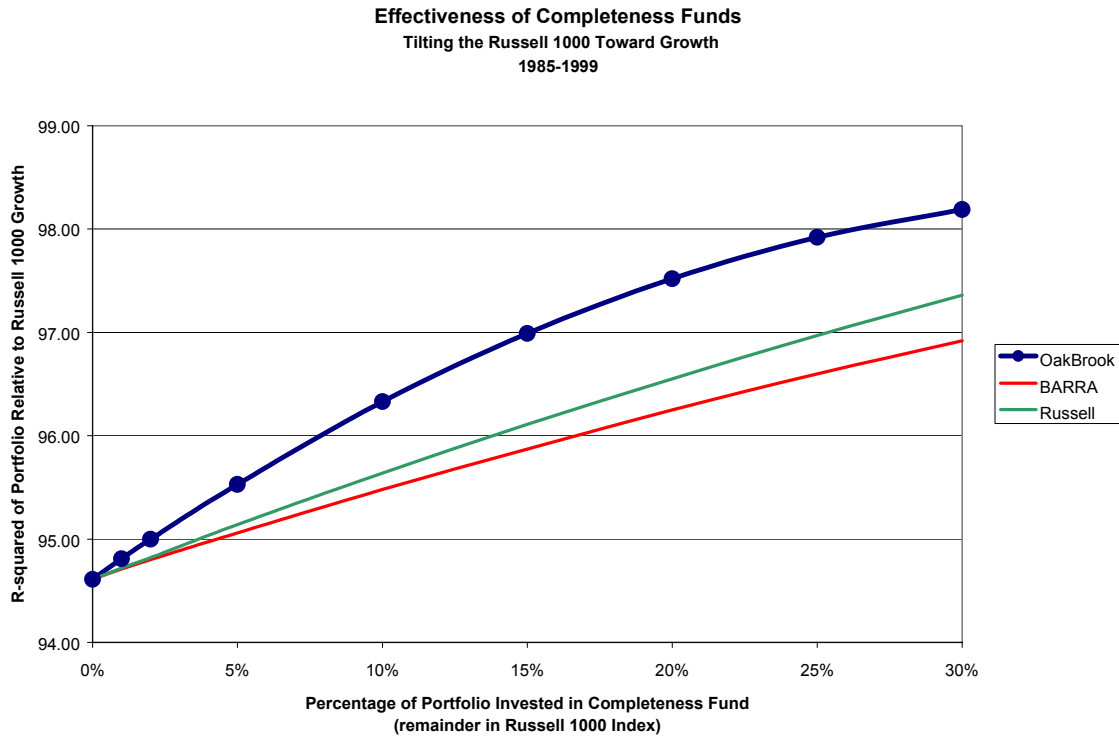
During periods when a particular style of investing enjoys great success, such as the 1998-1999 growth stock rally, passive investors may find it desirable to establish a temporary style bias in their portfolios. These turnover-conscious investors should be aware that style indices which recognize the distinction between stable and variable return stocks as well as growth and value may provide a more efficient means of achieving exposure to future growth and value rallies than investing in the generic BARRA or Russell style indices. In some cases, a 15% investment in these highly focused style indices can provide the overall portfolio with the same style exposure as a 25% or larger investment in a BARRA or Russell style index.

To illustrate, we have constructed several examples in which completeness funds based on three different baskets of style indices were combined with broad-based indices, such as the Russell 1000 or S&P 500, in an effort to improve the overall portfolio's ability to track a particular growth or value index from 1985 through 1999. A completeness fund is a customized basket of stocks or style indices designed to change a portfolio's overall style emphasis. The first completeness fund, the OakBrook completeness fund, was constructed using four style indices developed by OakBrook Investments: Variable Growth, Stable Growth, Variable Value and Stable Value. These indices combine the traditional growth and value categorization with a powerful new categorization based on the relative stability of a stock's past returns. As we shall see, the ability to distinguish stable and variable variants of growth and value behavior makes these highly focused indices particularly effective in tilting a portfolio toward growth or value. The second completeness fund, the BARRA completeness fund, was constructed from the S&P/BARRA Growth and Value Indices in combination with the Russell 2000 Growth and Value. The final completeness fund, the Russell completeness fund, was constructed from the Russell 1000 Growth and Value Indices in combination with the Russell 2000 Growth and Value.

### Tilting the Russell 1000 Toward Growth

Chart 1 compares the effectiveness of the three completeness funds in tilting a Russell 1000 Index portfolio toward the Russell 1000 Growth Index. Moving from left to right on the chart corresponds to an increase in the portfolio weight invested in a completeness fund. As portfolio weight is increased from 0 to 30%, the regression R-squared of the completed portfolio's return relative to the Russell 1000 Growth Index return rises more quickly when the OakBrook completeness fund is used than when the BARRA or Russell completeness funds are used. In fact, to achieve the same R-squared as a 15% investment in the OakBrook completeness fund one must invest 25% of the overall portfolio in the Russell completeness fund or more than 30% in the BARRA completeness fund.

Chart 1



It should be noted that the OakBrook completeness fund achieves these results even though it is at a slight disadvantage relative to the other completeness funds. The OakBrook Indices are drawn from the S&P 500. The OakBrook completeness fund therefore lacks some of the small cap exposure, provided by the Russell 2000 Indices, that can be used by the other two completeness funds to draw the overall portfolio closer to the Russell 1000 Growth Index target. As Table 1 illustrates, the Russell 2000 Growth plays a significant part in the BARRA completeness fund, particularly when the percentage of the overall portfolio invested in the completeness fund is small.

Table 1  
Composition of BARRA Completeness Fund  
At Various Levels of Investment When Tilting Toward Growth

Percentage of Overall Portfolio Invested in Fund	Composition of BARRA Completeness Fund	
	S&P/BARRA Growth	Russell 2000 Growth
1.0%	6.2%	93.8%
2.0%	47.4%	52.6%
5.0%	72.2%	27.8%
10.0%	80.4%	19.6%
15.0%	83.2%	16.8%
20.0%	84.6%	15.4%
25.0%	85.4%	14.6%
30.0%	85.9%	14.1%

The comparative lack of small cap exposure in the OakBrook completeness fund is more than offset by the ability of OakBrook’s style indices to distinguish stable and variable variants of the large cap growth and value styles. This is evident in the fact that 100% of the OakBrook completeness fund is allocated to the Variable Growth Index rather than a blend of Variable Growth and Stable Growth which would replicate the generic growth indices. The fund is allocated entirely to Variable Growth until the amount of the overall portfolio invested in the completeness fund rises above 30%. Only at this point is a small exposure to Stable Growth added. The ability to concentrate on growth stocks with highly variable returns is what provides the OakBrook completeness fund with its power.

Tilting the Russell 1000 Toward Value

Chart 2 compares the effectiveness of the three completeness funds in tilting a Russell 1000 Index portfolio toward the Russell 1000 Value Index. Once again, the OakBrook completeness fund is more effective than the other two completeness funds in tilting the overall portfolio toward the desired style. However, the advantage of being able to distinguish variable value and stable value stocks is not nearly as dramatic as the ability to distinguish variable growth and stable growth. This can be seen in the composition of the OakBrook completeness fund displayed in Table 2. Note that there is a meaningful exposure to both the Variable Value and Stable Value indices, signaling a move toward replicating the generic Russell value index, when 20% or more of the overall portfolio is invested in the completeness fund. This is in contrast to the growth example, where 100% of the completeness fund was allocated to variable growth even as the amount invested in the completion fund climbed to 30%.

Chart 2

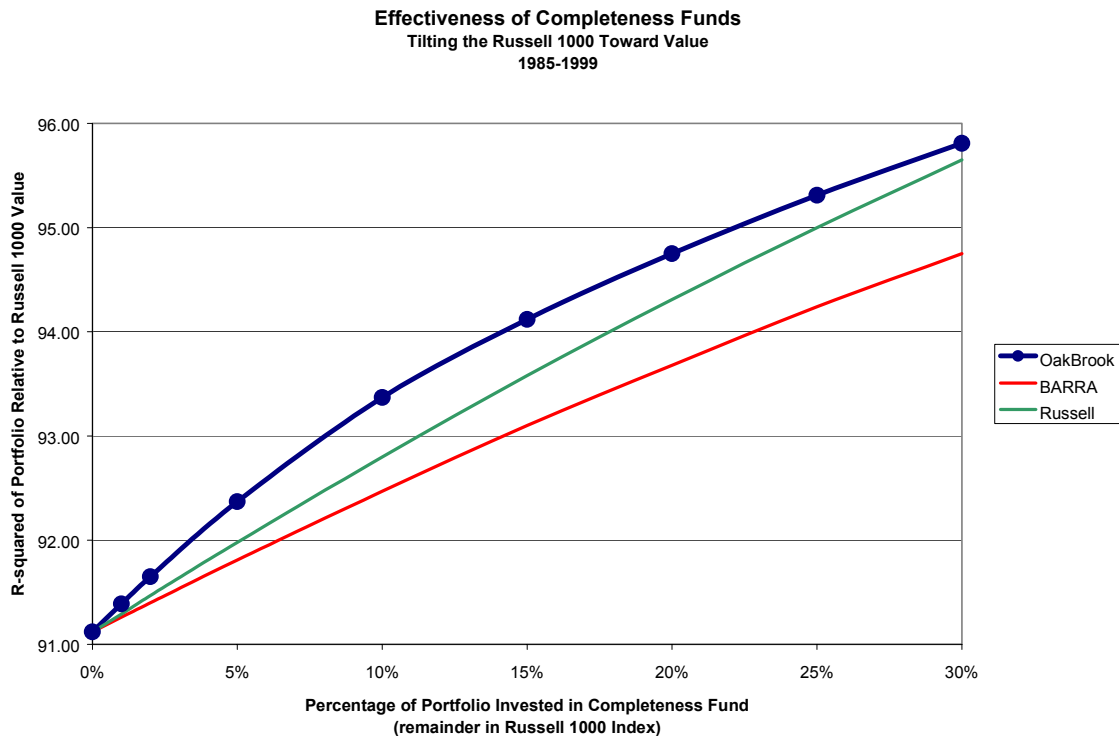


Table 2  
 Composition of OakBrook Completeness Fund  
 At Various Levels of Investment When Tilting Toward Value

Percentage of Overall Portfolio Invested in Fund	Composition of OakBrook Completeness Fund	
	Stable Value	Variable Value
1.0%	100.0%	0.0%
2.0%	100.0%	0.0%
5.0%	100.0%	0.0%
10.0%	100.0%	0.0%
15.0%	97.0%	3.0%
20.0%	82.9%	17.1%
25.0%	74.4%	25.6%
30.0%	68.8%	31.2%

*Tilting the S&P 500 Toward Growth or Value*

Charts 3 and 4 compare the effectiveness of the three completeness funds in tilting an S&P 500 Index portfolio toward the S&P/BARRA Growth and S&P/BARRA Value, respectively. Once again, there is a greater benefit to distinguishing variable and stable stocks when establishing a tilt toward growth than toward value. However, the results are not as dramatic as those achieved when applying a style tilt to the Russell 1000 Index. This can be seen in a simple visual comparison of charts 2 and 4, and also by comparing the composition of the relevant completeness funds. The OakBrook completeness fund used to tilt the Russell 1000 toward growth in Chart 1 adds stable growth exposure only after more than 30% of the overall portfolio is invested in the completeness fund. By comparison, the completeness fund used to tilt the S&P 500 toward growth adds stable growth exposure, and begins the move toward replicating the S&P/BARRA Growth Index, before the amount invested in the completeness fund reaches 25%. On the value side, the OakBrook completeness fund used to tilt the Russell 1000 toward value in Chart 2 allocates 100% of the fund to stable value when 10% of the overall portfolio is invested in the completion fund. In the completion fund used to tilt the S&P 500 toward value in Chart 4, less than 80% of the fund is allocated to stable value when 10% of the overall portfolio is invested in the completeness fund.

*Summary*

The ability to distinguish stocks with variable and stable return behavior can greatly enhance the ability of a style index family to tilt a broad-based index, such as the S&P 500 or Russell 1000, toward the growth or value style. The enhancement provided is more dramatic when tilting a portfolio toward growth than toward value. It is also stronger when the indices are used to alter the style of a Russell 1000 Index portfolio rather than an S&P 500 Index portfolio.

Chart 3

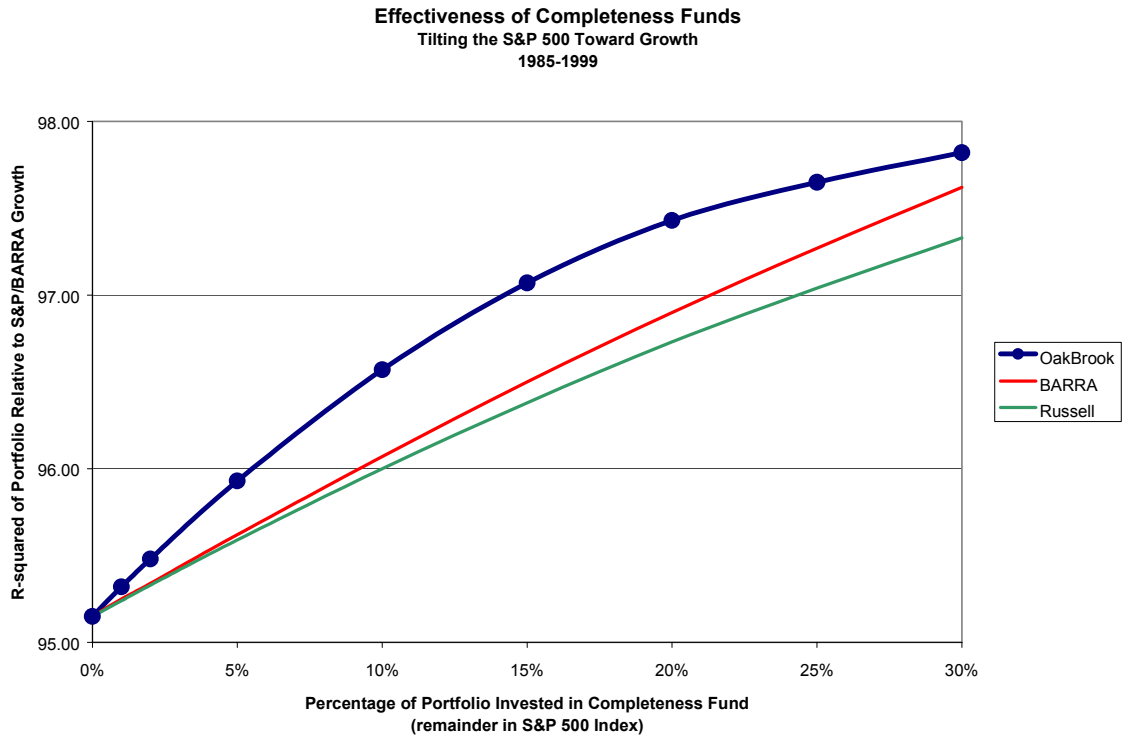
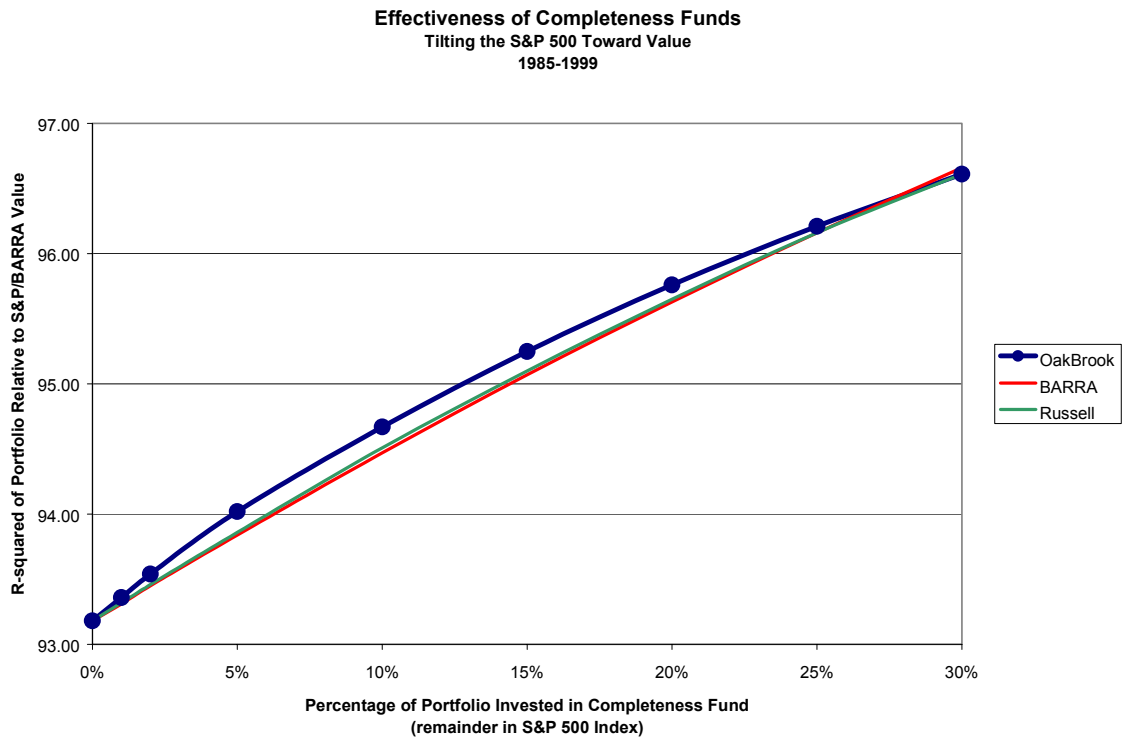


Chart 4



## Disclosures

Performance histories for OakBrook's indices have been calculated going back to January, 1985. The simulated results are based on total return calculations which include a reinvestment of accrued dividends and price changes. As with other indices, returns are gross of all fees and expenses, including management fees, broker's commissions and market impact costs. The indices were rebalanced bi-annually, at the end of each June and December, with explicit controls to limit index turnover. During each rebalancing, firms were placed in indices based on a computer model which evaluated four years of historical information. Programming of the computer model was completed in May of 1999, based on data through December of 1998.

As with any study conducted after the fact, results are subject to back testing bias that can inflate returns. The results presented do not represent the actual performance of any OakBrook client portfolio and were achieved by means of the retroactive application of a program that was designed with the benefit of hindsight. Results may not reflect the impact of material market or economic factors which occurred during the back test period. OakBrook Investments, LLC has not managed portfolios using the methodology shown and the results presented should not be considered a substitute for the investment performance of actual OakBrook accounts. Results should not be considered indicative of the skill of OakBrook's portfolio managers. The back test results shown are in no way indicative of the future performance of the OakBrook Style Indices or any accounts managed to track those indices and clients may experience a loss while investing in these indices. Total fees are expected to be less than 45 basis points per year. The indices shown are not managed portfolios.

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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. Index results include re-investment of dividends and other earnings, and do not reflect sales charges. The index is not a managed portfolio.

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