



## **Improving the Efficiency of Completeness Funds**

### **June 8, 2000**

#### Introduction

Adding a completeness fund to a portfolio can be a very effective means of reducing the portfolio's aggregate investment style risk. A completeness fund is a customized basket of stocks or style indices designed to offset or neutralize the aggregate investment style bias of the other funds included in a portfolio. One of the challenges faced by users of completeness funds is determining how much of the overall portfolio should be allocated to the completeness fund. Too large an allocation dilutes the ability of other (active) funds to add value to the portfolio. Too small an allocation and the completeness fund will not be very effective in reducing the portfolio's style risk. The OakBrook Style Indices can make the allocation decision easier by providing a better tradeoff, in terms of risk reduction per dollar invested, than other style indices.

#### An Example

To illustrate, we have constructed an example in which completeness funds based on three different baskets of style indices were combined with Alliance Capital's Large Cap Growth Fund<sup>1</sup> in an effort to improve the overall portfolio's ability to track the Russell 1000 Index from 1985 through 1999. The first completeness fund, the OakBrook completeness fund, was constructed from OakBrook's four basic style indices: 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. 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. It should be noted that the OakBrook completeness fund may be at a slight disadvantage relative to the other two funds. The OakBrook Indices are drawn from a universe of large cap stocks. 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 target.

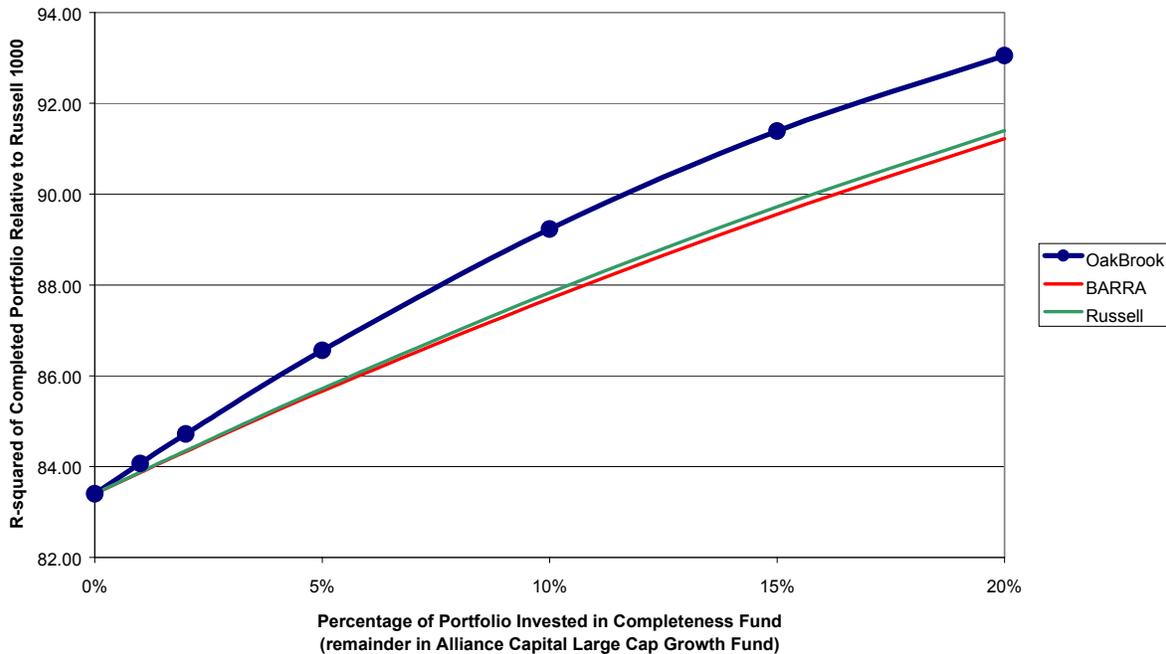
As chart 1 indicates, the comparative lack of small cap exposure in the OakBrook completeness fund is more than offset by the ability of OakBrook's style indices to distinguish stable and variable variants of the large cap growth and value styles. Moving from left to right on the chart corresponds to an increase in the portfolio weight allocated to a completeness fund. As portfolio weight is increased from 0 to 20%, the regression R-squared of the completed portfolio's return relative to the Russell 1000 Index return

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<sup>1</sup> Quarterly returns were retrieved from the PSN database and have been used without the permission of Alliance Capital. The authors are in no way affiliated with Alliance Capital.

risers more quickly when the OakBrook completeness fund is used than when the BARRA or Russell completeness funds are used. In fact, a 15% allocation to the OakBrook completeness fund has nearly the same risk reducing benefit as a 20% allocation to the other two funds. This means an extra 5% of the portfolio can remain at work in the hands of the investor's preferred managers.

Chart 1  
**Effectiveness of Completeness Funds**  
 with Alliance Capital Large Cap Growth Fund  
 1985-1999



### Generalizations

While the results here are certainly manager specific, they do generalize in two ways. First, one sees nearly identical results when the completion target is changed from the Russell 1000 Index to the S&P 500. The regression R-squared for a 15% allocation to the OakBrook completeness fund continues to approximate the R-squared for a 20% allocation to either of the other of the other completeness funds. However, R-squared is about 2% lower overall as the Russell 1000 appears to be a better benchmark for the Alliance Large Cap Growth Fund than the S&P 500. Second, if the Russell 1000 Growth or Value Index is substituted for the Alliance Large Cap Growth Fund, the OakBrook completeness fund continues to offer a more effective means of moving the overall portfolio's style toward the Russell 1000 Index (see charts 2 and 3). To the extent that the growth and value indices can be thought of as "representative" of managers in the growth and value styles, it can be said that these results generalize to other managers and other portfolios.

Chart 2  
**Effectiveness of Completeness Funds**  
 with Russell 1000 Growth Index  
 1985-1999

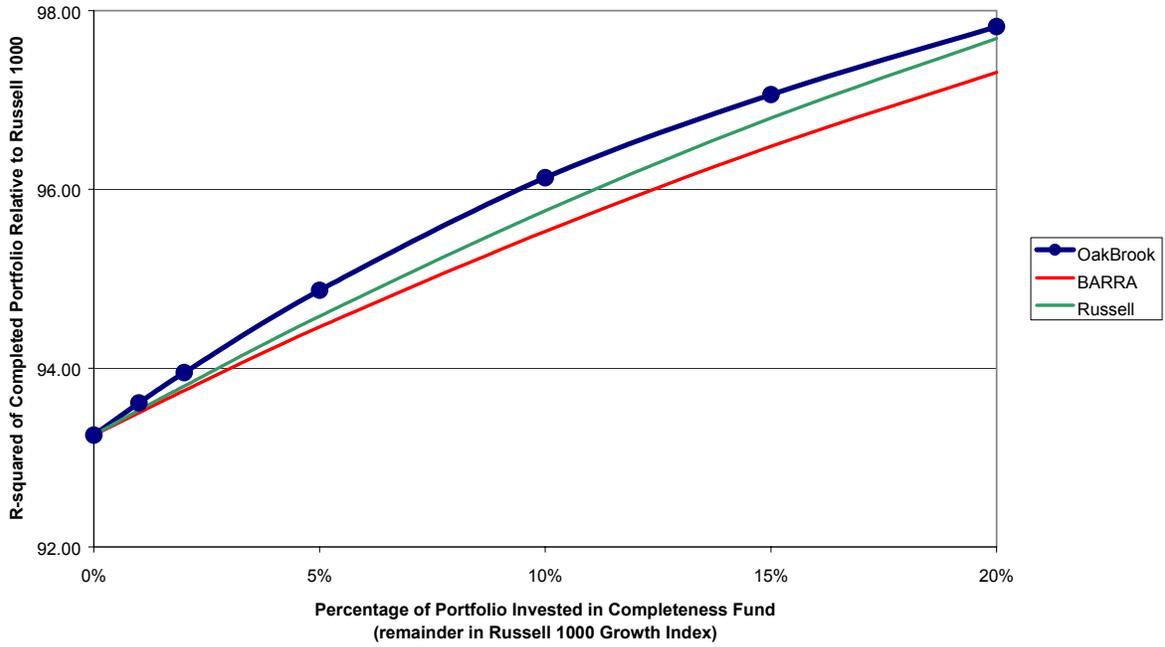
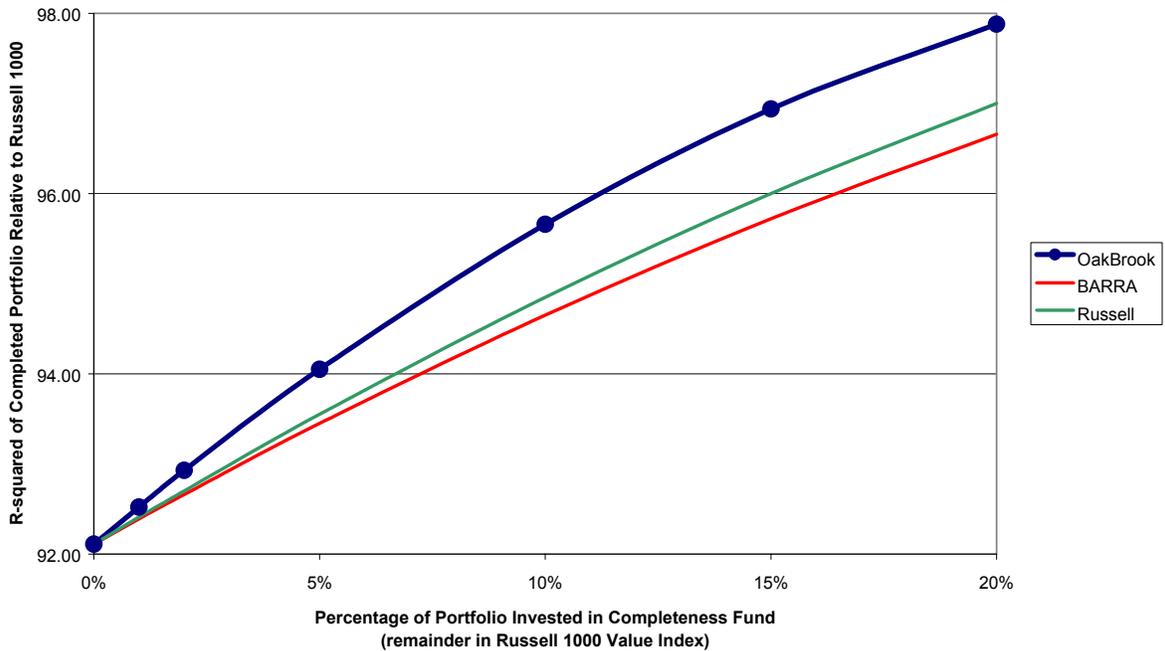


Chart 3  
**Effectiveness of Completeness Funds**  
 with Russell 1000 Value Index  
 1985-1999



## 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.

The back testing is for investment strategies that may or may not be utilized in advising OakBrook's advisory clients. OakBrook's clients who do not utilize the strategies reflected by the Style Indices' results may receive investment advice and obtain performance results which may differ from those clients' accounts utilizing such Style Indices. The investment returns for OakBrook's clients, and clients of the predecessor advisors with which OakBrook portfolio managers were affiliated, may be materially different from the investment results portrayed in the Style Indices.

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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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