

## Follow the Leader

According to the *Ibbotson SBBI 2010 Classic Yearbook*, which presents a myriad of risk and return statistics for stocks, bonds, bills and inflation over the period 1926-2009, small firm stocks (defined as the bottom quintile of securities ranked by market capitalization from 1926-2009) have provided an 11.9% compound annual return versus a 9.8% compound annual return for the large company S&P 500 Index. While a return differential of 2.1% may not appear to be a significant advantage, the difference in wealth creation over an investment lifetime is astounding. For example, if you invest \$1,000 and earn 9.8% compounded for 40 years, your portfolio would grow to \$42,802. On the other hand, invest the same amount and earn 11.9% compounded annually for 40 years and your portfolio would expand to \$89,785.

Of course, neither portfolio will earn the compound rate each and every year, nor will small firm stocks outperform large firm stocks year-after-year. In fact, during the last 70 years, small firm stocks have provided superior returns relative to large firm stocks during 44 years and they underperformed large firm stocks during 26 years. During that period (1/01/1940 - 12/31/2009), small firm stocks grew at a 14.5% compound annual rate versus a 10.8% compound annual rate for large firm stocks. A hypothetical \$1,000 investment in large firm stocks during that 40-year period would have grown to \$1,312,000 while a similar hypothetical investment in small firm stocks would have ballooned to \$13,073,000.

While this is a significant difference in terminal wealth, the value of perfect information is astounding. For example, if you knew in advance which category of stocks would provide the best

annual return and directed your investment to that category (i.e., invest in small firm stocks when they perform best and invest in large firm stocks when they are the market leaders), your compound annual rate of return would have expanded to 19.3% and an initial hypothetical investment of \$1,000 would have grown to a whopping \$231,650,000! Of course, if you happened to be star-crossed, and invested in the poorest performing equity class, your compound annual return would have shrunk to 6.3%, and an initial hypothetical investment of \$1,000 would have grown to \$720,000.

Even if you would have made only a few errors during that 70-year period, you could cause irreparable damage to your long-term returns. For example, suppose you had invested your entire investment portfolio in either small firm stocks or large firm stocks at the beginning of each year. If you were correctly invested in the highest return equity class 80% of the time, but happened to make big mistakes when you were invested in the inferior return investment class when it exhibited significant underperformance, your compound annual return could have declined to 13.3%, which is below the return of a small firm stock buy-and-hold strategy and very close to the 12.7% return provided by a portfolio consisting of half small firm stocks and half large firm stocks.

Of course, perfect information about the future course of stock prices does not exist on either Wall Street or Main Street. However, there appears to



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be enough information about small company stock returns to potentially improve long term returns. Once again, data in the *Ibbotson SBBI Classic Yearbook* provides a clue. That clue lies in the relatively high serial correlation that appears to exist among small firm risk premia.

Small firm stock premia are created by subtracting large firm stock returns from small firm stock returns. Serial correlation describes the extent to which the return in one period is related to the return in the subsequent period. A correlation of near +1 indicates a trend while a correlation near 0 indicates the absence of any relationship.

Interestingly, small firm stock risk premia exhibit a relatively high positive serial correlation, which indicates the strong possibility of a trend. That is, the excess (deficient) small firm stock returns (relative to large firm stock returns) viewed in a particular year may give a clue to the excess (deficient) returns in a subsequent year.

To test the seemingly persistent trends in small firm stock premia we examined the returns of small firm

and large firm stocks over the 70-year period 1940-2009. Our goal was to hypothetically be invested in small firm stocks during years when they produced greater returns than large firm stocks and to be invested in large firm stocks when they provided the higher returns. Our strategy was to follow the leader. That is, the category that produced the greatest return during a given year dictated our allocation in the subsequent year.

We began by observing the returns of large and small firm stocks during 1939. During that year, small firm stocks outperformed large firm stocks. Thus, we invested in small firm stocks in 1940. Since small firm stock returns topped those of large firms in 1940, we maintained our investment in small firm stocks in 1941, etc. When small firm stocks underperformed in 1946, we switched our allocation to large firm stocks in 1947.

The “follow the leader strategy” produced remarkable results. During the 70-year period, we were invested in the best performing equity class during 48 years or 68.6% of the time. Furthermore, we tended to be invested in the “correct” equity class when that class

### Follow The Leader Strategy Uncovers Serial Correlation Trend, 1940-2009

	<u>Follow The Leader</u>	<u>All Small Cap Buy &amp; Hold</u>	<u>All Large Cap Buy &amp; Hold</u>
Years invested in better performing asset class	48 of 70 (68.6%)	44 of 70 (62.9%)	26 of 70 (37.1%)
Annualized return % 1/01/1940 - 12/31/2009	16.9%	14.5%	10.8%
Hypothetical growth of \$1	\$54,321	\$13,073	\$1,312

Source: Ibbotson & Associates, *Stocks, Bonds, Bills & Inflation Classic Yearbook*, 2010

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had the highest return differential. The follow the leader strategy produced a 70-year compound annual return of 16.9%. That amounted to 6.1 percentage points better than a large cap buy-and-hold strategy and a 2.4 percentage point improvement in a small cap buy-and-hold strategy. One dollar invested in a large cap buy-and-hold strategy over this 70-year period would have grown to \$1,312. One dollar invested in a small cap buy-and-hold strategy would have grown to \$13,073. One dollar invested in the follow the leader strategy in 1940 would have grown to \$54,321.

Of course, past returns are no guarantee of future results. In addition, we are not advocating an “all or nothing” small cap investment strategy. We have always believed that investors are best served by the maintenance of a well-diversified portfolio consisting of several categories of assets. However, the follow

the leader strategy might be incorporated in a diversified portfolio. Here’s a simple example.

Suppose that you have decided to allocate 70% of the equity portion of your portfolio to large cap stocks and 30% to small cap stocks. If small caps outperform large caps that year, you could increase your allocation to small caps and reduce your allocation to large cap stocks in the subsequent year. When small cap stocks underperform large cap stocks, you could then reverse direction and overweight small cap stocks and overweight large cap stocks in the subsequent year. This strategy keeps you diversified across categories of assets and reduces the risk inherent in an all or nothing strategy. According to the historical record, this strategy should improve the investment return obtained by a static buy-and-hold asset allocation strategy

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**Diversification does not assure a profit or protect against loss in a declining market.**

A correlation coefficient is a measure of the interdependence of two random variables that ranges in value from -1 to +1, indicating perfect negative correlation at -1, absence of correlation at zero, and perfect positive correlation at +1. The S&P 500 Index is a broad based unmanaged index of 500 stocks, which is widely recognized as representative of the equity market in general.

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