Fundamentally weighted indexing: Weighing the difference

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Vice President, Alternative Beta and Asset Allocation Strategist
The popularity of index-based mutual funds and exchange-traded funds (ETFs) in recent years is partly attributable to the fact that many actively managed mutual funds have had difficulty outperforming the market, especially when costs are factored in. The first ETF was launched in 1993, and at the end of 2013 there were more than 1,300 ETFs in the market, with over $1.64 trillion in assets under management. Along with the growth of ETFs has come increased innovation in ETF and mutual fund strategies. Most notable has been the evolution of fundamentally weighted strategies.

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Anthony Davidow is responsible for providing Schwab’s point of view on asset allocation and portfolio construction. He is also responsible for providing research and analysis on alternative beta strategies and how investors should incorporate them in their portfolios.

Before joining Schwab, Davidow was a managing director, portfolio strategist, and head of the ETF Knowledge Center for Guggenheim Investments. Before joining Guggenheim, Davidow was executive vice president and head of distribution for IndexIQ. Previously, he spent 15 years at Morgan Stanley, where he served as managing director and head of sales and training for the Consulting Services Group. While at Morgan Stanley, he worked with many of the firm’s largest clients in developing and implementing asset allocation strategies, incorporating active and passive strategies, and using alternative investments as risk management tools.

Davidow has authored several white papers and strategy pieces and spoken at industry conferences on a range of topics, including “The Merits of Core-Satellite Investing,” “Asset Allocation and Manager Selection: Adaptive Allocation,” “Alpha-Beta Separation,” “Alternative Weighting Strategies,” “The Role and Use of Alternative Investments,” “Currency as an Asset Class,” “An Evolutionary Approach to Portfolio Construction,” and “Alternative Beta Strategies,” among others.

Davidow holds a B.B.A. degree in finance and investments from Bernard M. Baruch College and has earned the Certified Investment Management Analyst (CIMA®) designation from the Investment Management Consultants Association (IMCA) and the Wharton School of the University of Pennsylvania. He sits on the board of directors for IMCA. He holds Series 7, 24, and 63 registrations.
In this paper

We will discuss the growth of index-based ETF and mutual fund strategies and the need for investors to weigh the differences in construction methodologies and biases apparent in the various strategies. In addition, we will cover the following topics:

- Impact of the expansion of investment choices available to investors for gaining exposure to market segments

- Comparison of the different characteristics and index construction methodologies of traditional market-cap and fundamentally weighted index strategies

- Evaluation of the historical performance of fundamental strategies, demonstrating their ability to deliver better risk-adjusted returns than their market-cap equivalents

- Value of combining fundamental strategies with market-cap strategies to build more durable client portfolios
ETFs were originally designed to mimic the most popular indexes: S&P 500®, Russell 1000®, MSCI EAFE, etc. These indexes are market-cap weighted, meaning the company with the largest market capitalization has the largest weight in the index. Market-cap indexes tend to overweight overvalued stocks and underweight undervalued stocks. It’s crucial that investors understand the biases in indexes and the types of environments in which they tend to outperform and underperform, which we will discuss in greater detail in this article.

Fundamental strategies—sometimes referred to as alternative beta, strategy beta, or smart beta because they provide broad-based market exposure (beta)—weight securities based on fundamental factors. Rather than merely providing the biggest weights to the largest companies, fundamental strategies weight securities based on factors such as sales, cash flow, and dividends plus buybacks. The several different fundamental strategies available in the market vary based on the factors they screen.

<table>
<thead>
<tr>
<th></th>
<th>Market Cap</th>
<th>Fundamental</th>
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<tbody>
<tr>
<td>Portfolio weighting</td>
<td>Cap-weighting</td>
<td>Economic factors</td>
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<tr>
<td>Portfolio construction</td>
<td>Larger-cap bias</td>
<td>Value tilt</td>
</tr>
<tr>
<td>Portfolio turnover</td>
<td>Reconstitution</td>
<td>Reconstitution and rebalancing</td>
</tr>
<tr>
<td>Tax efficient</td>
<td>Typically</td>
<td>Typically</td>
</tr>
<tr>
<td>Cost structure</td>
<td>Lowest cost</td>
<td>Low cost</td>
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</tbody>
</table>

In fact, fundamentally weighted index strategies screen securities in a fashion similar to that of many actively managed mutual funds and ETFs. But by following a rules-based discipline, fundamental strategies remove the emotions that often hurt active managers. The indexes are rebalanced at predetermined intervals. Traditional market-cap indexes adjust portfolio weights only when securities are added or deleted from the underlying index.

The Schwab Center for Financial Research believes that fundamental strategies can capture the positive attributes of both traditional passive strategies and actively managed mutual funds. Their unique construction process may provide investment opportunities different from those of market-cap-weighted strategies.
Here are some key findings from our research on fundamental strategies:

- Weighting securities based on economic factors, rather than merely on market cap, leads to a more sophisticated allocation of capital.
- Fundamentally weighted index strategies have delivered better risk-adjusted returns than their market-cap equivalents since inception.
- Fundamentally weighted index strategies have been able to outperform many actively managed mutual funds.¹

**Fundamentally weighted indexing**

Rob Arnott and his colleagues at Research Affiliates, LLC pioneered the use of the Fundamental Index® methodology. Based on their research, Research Affiliates has shown cumulative outperformance since inception relative to traditional indexes.¹ Arnott states, “We believe these results are not mere accidents of history but are likely to persist into the future.”²

Fundamental strategies represent an evolutionary step in indexing, moving beyond traditional market-cap indexing by applying logic and intelligence to index construction. While market-cap indexes and fundamentally weighted index strategies may begin with the same basket of eligible securities, the differences in construction can lead to dramatically different results.

Market-cap vehicles are designed to provide cost-effective exposure to broad market indexes. Since actively managed mutual funds have had difficulty outperforming passive benchmarks over time, market-cap ETFs have generally been embraced by investors as cheap beta. Rather than paying higher fees for actively managed mutual funds, investors can better control their costs with market-cap ETFs.

The chart on the previous page compares **market-cap** and **fundamental** strategies. Fundamentally weighted index strategies, available in both indexed mutual funds and ETFs, can provide cost-effective and tax-efficient exposure to the markets. Fundamentally weighted index strategies have historically delivered excess return relative to the market (as defined by the S&P 500 Index).³

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Because fundamentally weighted index strategies screen and weight securities based on economic factors, they may have a value tilt. It is important to note, however, that they are not value indexes. Fundamentally weighted index strategies tend to own value, core, and growth securities.

With the introduction of fundamental strategies, investors now have more options for owning market segments. They can select among traditional market-cap strategies, actively managed mutual funds, and fundamentally weighted index strategies. ETFs and index-based mutual funds allow investors to access virtually every segment of the market. ETFs tend to provide a more cost-effective structure, which has been particularly appealing to investors. The growth of ETFs has been fueled by a number of factors: product innovation, broader acceptance by investors, and the difficulties active managers have had in justifying their fees through outperformance.

With the growth of choices, investors need to understand the differences in strategies and the corresponding results. Exhibit 1 below shows the top 10 holdings in the Russell Fundamental U.S. Large Company Index and the Russell 1000 Index. While several of the companies are the same, the weights are different. Apple is the largest company in the Russell 1000 Index because it is the largest company by market capitalization. Conversely, Apple is not even represented in the top 10 holdings of the Russell Fundamental U.S. Large Company Index.

Exhibit 1: Top 10 stocks with weights

<table>
<thead>
<tr>
<th>Russell Fundamental U.S. Large Company Index</th>
<th>Weight</th>
<th>Russell 1000 Index (Traditional Market-Cap Index)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExxonMobil Corp.</td>
<td>5.04%</td>
<td>Apple Inc.</td>
<td>2.77%</td>
</tr>
<tr>
<td>Chevron Corp.</td>
<td>2.42%</td>
<td>ExxonMobil Corp.</td>
<td>2.37%</td>
</tr>
<tr>
<td>AT&amp;T Inc.</td>
<td>2.02%</td>
<td>Microsoft Corp.</td>
<td>1.65%</td>
</tr>
<tr>
<td>Microsoft Corp.</td>
<td>1.95%</td>
<td>Google Inc.</td>
<td>1.59%</td>
</tr>
<tr>
<td>ConocoPhillips</td>
<td>1.92%</td>
<td>General Electric Co.</td>
<td>1.53%</td>
</tr>
<tr>
<td>General Electric Co.</td>
<td>1.56%</td>
<td>Johnson &amp; Johnson</td>
<td>1.35%</td>
</tr>
<tr>
<td>Bank of America Corp.</td>
<td>1.44%</td>
<td>Chevron Corp.</td>
<td>1.27%</td>
</tr>
<tr>
<td>Proctor &amp; Gamble Co.</td>
<td>1.44%</td>
<td>Proctor &amp; Gamble Co.</td>
<td>1.17%</td>
</tr>
<tr>
<td>Wal–Mart Stores Inc.</td>
<td>1.39%</td>
<td>JPMorgan Chase &amp; Co.</td>
<td>1.16%</td>
</tr>
<tr>
<td>JPMorgan Chase &amp; Co.</td>
<td>1.30%</td>
<td>Wells Fargo &amp; Co.</td>
<td>1.15%</td>
</tr>
</tbody>
</table>

Source: Russell Indexes. Data as of December 31, 2013. Holdings are subject to change without notice. For illustrative purposes only. Not a recommendation of any fund or security.
As shown in Exhibit 1 on the previous page, several of the companies appear in both the Russell Fundamental U.S. Large Company and Russell 1000 Indexes. As of Q4 2013, Apple was the largest holding in the Russell 1000 Index. As of the end of Q4 2013, it was the 23rd-largest holding in the Russell Fundamental U.S. Large Company Index. Through the first three quarters of 2012, Apple's price was up more than 65%. Most fundamentally weighted indexes and many active managers underweighted Apple, making it difficult for them to outperform market-cap-weighted indexes during that time. Apple has had a disproportionate impact on the market-cap indexes, exaggerating the rise and the subsequent fall. Based on the construction methodology, market-cap weighting should generally perform better in market environments that reward larger-cap stocks.

As you can see from Exhibit 2 below and Exhibit 3 on the following page, the Russell 1000 Index and Russell Fundamental U.S. Large Company Index have experienced different results over time, and these differences are largely attributable to the ways the indexes are constructed. Therefore, we believe that investors should understand the nature of the index construction and the environments that should help a particular strategy outperform or could cause it to underperform. Furthermore, we believe that there is merit to combining market-cap and fundamentally weighted index strategies.

Exhibit 2: Monthly returns
The larger-cap bias of market-cap indexes means they are likely to outperform when the biggest companies are outperforming the overall market. As mentioned previously, when Apple outperformed the overall market, it provided an advantage to market-cap indexes. Fundamentally weighted indexes tend to outperform in value cycles and markets in which there is a broadening of leadership (meaning they are less dependent on the biggest companies). As illustrated below, academic research and research conducted by the Schwab Center for Financial Research has shown that fundamentally weighted indexes have outperformed their market-cap equivalents over time.


<table>
<thead>
<tr>
<th></th>
<th>Russell Fundamental U.S. Large Company</th>
<th>Russell 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>15.85</td>
<td>14.96</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>12.74</td>
<td>12.72</td>
</tr>
<tr>
<td>Alpha</td>
<td>0.88</td>
<td>0.00</td>
</tr>
<tr>
<td>Beta</td>
<td>0.99</td>
<td>1.00</td>
</tr>
<tr>
<td>Sharpe ratio (arith.)</td>
<td>1.24</td>
<td>1.17</td>
</tr>
<tr>
<td>Number of observations</td>
<td>34.00</td>
<td>34.00</td>
</tr>
</tbody>
</table>


Exhibit 3 provides an analysis of the Russell Fundamental U.S. Large Company Index and the Russell 1000 Index. As the data shows, the Russell Fundamental U.S. Large Company Index has delivered excess returns (15.85% vs. 14.96%) with roughly the same amount of risk as the Russell 1000 Index (12.74% vs. 12.72%). Past performance is no guarantee of future results.
Conclusion

The Schwab Center for Financial Research believes that fundamental strategies represent an evolutionary step forward. While market-cap ETFs can provide cost-effective exposure to virtually every segment of the market, investors need to understand how they are constructed and the biases introduced through their construction methodology. Fundamentally weighted indexes begin with the same basket of securities, but they weight securities based on fundamental factors such as sales, cash flows, and dividends plus buybacks. The weightings, and corresponding results, can be substantially different.

With the growth of index-based ETF and mutual fund strategies, investors have many ways to gain exposure to market segments. Our research indicates that fundamental strategies have delivered attractive risk-adjusted results relative to market-cap strategies over their limited existence. We believe that fundamental strategies may serve as an important complement to market-cap strategies.
Glossary of terms

**Alpha.** A performance measure on a risk-adjusted basis. Alpha takes the volatility (risk) of a mutual fund or other type of investment and compares its risk-adjusted performance against a benchmark index. The excess return of the fund relative to the return of the benchmark index is the fund's alpha.

**Beta.** A measure of the volatility, or systematic risk, of a security or a portfolio compared with the market as a whole. Beta is used in the capital asset pricing model (CAPM), which calculates the expected return of an asset based on its beta and expected market returns.

**Correlation.** Correlation measures the relationship and movement of two or more securities. Correlations range between -1 and +1. Perfect positive correlation (a correlation of +1) implies that as one security moves, either up or down, the other security will move in lockstep in the same direction. Perfect negative correlation means that if one security moves in either direction, the security that is perfectly negatively correlated will move in the opposite direction. If the correlation is zero, the movements of the securities are said to have no correlation; they are completely random.

**Fundamentally weighted index.** A type of equity index in which components are chosen based on fundamental criteria as opposed to market capitalization. Fundamentally weighted indexes may be based on metrics such as sales, cash flow, and dividends plus buybacks. Proponents of these indexes claim that they are a more accurate aggregate measure of the market because market-capitalization figures tend to overweight companies that are richly valued while underweighting companies with low valuations. Fundamentally weighted indexes are sometimes referred to as alternative beta or smart beta.

**Market-cap weighting.** Most of the broadly used market indexes today are “cap-weighted” indexes, such as the S&P 500, Russell, and MSCI indexes. In a cap-weighted index, large price moves in the largest components can have a dramatic effect on the value of the index. Some investors believe that this overweighting toward the larger companies gives a distorted view of the market.

**MSCI EAFE Index.** The MSCI EAFE Index is recognized as the preeminent benchmark in the U.S. for measuring international equity performance. It comprises the MSCI country indexes that represent developed markets outside of North America: Europe, Australasia, and the Far East.
The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index and includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market.

The Russell Fundamental U.S. Large Company Index measures the performance of the large-company segment by fundamental scores. The fundamental overall company scores are created using as the universe the members of the Russell 3000 Index.

The S&P 500 Index has been widely regarded as the benchmark of the large-cap U.S. equities market since the index was first published in 1957. The index includes 500 leading companies in leading industries of the U.S. economy based on market capitalization, capturing 75% coverage of U.S. equities.

A ratio developed by Nobel laureate William F. Sharpe to measure risk-adjusted performance. The Sharpe ratio measures the excess return (or risk premium) per unit of deviation (risk) in an investment. The Sharpe ratio characterizes how well the return of an asset compensates the investor for the risk taken. When comparing two assets vs. a common benchmark, the one with a higher Sharpe ratio provides better return for the same risk (or, equivalently, the same return for lower risk).

Standard deviation is a statistical measurement that sheds light on historical volatility. For example, a volatile portfolio will have a higher standard deviation than a less volatile portfolio. A large dispersion tells us how much the return on the fund is deviating from the expected normal returns.
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