charles SCHWAB

SCHWAB CENTER FOR FINANCIAL RESEARCH

Journal of Investment Research

Evolving beyond plain vanilla ETFs

Anthony B. Davidow, CIMA®

Vice President, Alternative Beta and Asset Allocation Strategist, Schwab Center for Financial Research®

As ETFs have evolved over the last several years, investors have gained more options for exposure to market segments. The first generation of broad-market ETFs provided plain vanilla exposure to the various markets. With the introduction of alternatively weighted strategies, investors can now choose between vanilla, chocolate, strawberry, or combinations of *flavors*.

In this paper

We will describe the evolution of exchange-traded funds (ETFs) from broad-market, simple exposure strategies to alternatively weighted strategies. Specifically, we will discuss the merits of fundamentally weighted index strategies and provide guidance on how you can use them as a complement to market cap. In addition, we will cover the following topics:

- Comparison of the different characteristics and index construction methodologies of traditional market-cap and fundamentally weighted index strategies
- Evaluation of the historical performance of fundamentally weighted index strategies, including market conditions when they are likely to outperform comparable market-cap strategies
- Demonstration of the potential value of combining fundamental strategies with market-cap strategies to build more attractive risk-adjusted client portfolios

The first generation of ETFs provided a cost-effective, tax-efficient structure, and appealed to investors seeking market exposure (i.e., beta). Much of the early growth came at the expense of active mutual funds that had difficulty outperforming their passive counterparts, especially when factoring in their costs.

As ETFs began to evolve, ETF providers sought more innovative strategies to respond to investors' appetites. One of the most innovative developments over the last several years has been the introduction of *fundamentally weighted* strategies. Fundamental strategies are sometimes referred to as *alternative beta, strategy beta,* or *smart beta* because they provide broad-based market exposure (beta) and weight securities based on fundamental factors rather than merely providing the biggest weights to the largest companies.

Fundamental strategies represent an evolutionary step forward beyond the simple plain vanilla exposure that broad-based ETFs have offered in the past. Fundamental strategies weight portfolios based on such factors as sales, cash flow, and dividends plus buybacks. Fundamental strategies come in different flavors, depending on the factors used for screening.

The Schwab Center for Financial Research believes that choices are good for investors. We believe that there is a role for both market-cap and fundamental strategies.

Exhibit 1

	Market cap	Fundamental
Portfolio weighting	Cap weighting	Economic factors
Bias	Larger cap/growth	Value tilt
Portfolio turnover	Reconstitution	Reconstitution and rebalancing
Tax efficient	Typically	Typically
Cost structure	Lowest cost	Low cost
Returns	Beta	Beta + potential alpha

- Market-cap strategies provide cost-effective exposure to the various market segments.
- Fundamental strategies weight securities based on economic factors, rather than merely weighting based on market cap, potentially leading to a more intelligent allocation of capital.
- Combining market-cap and fundamental strategies may provide better risk-adjusted results than owning either individually.

Comparing the options

Fundamental strategies represent an evolutionary step in indexing, moving beyond naive market-cap indexing, applying more logic and intelligence to index construction. Fundamental strategies apply a rules-based discipline in constructing and weighting an index. While a market-cap index and a fundamentally weighted index may begin with the same basket of eligible securities, the difference in construction leads to dramatically different results.

Market-cap ETFs provide cost-effective exposure to broad-market indexes. Rather than paying higher fees for active mutual funds, investors can better control their cost structure with market-cap ETFs. With the historical difficulty that many active mutual funds have had outperforming passive benchmarks over time, market-cap ETFs have been embraced by investors as "cheap beta."

Exhibit 1 provides some comparisons of market-cap and fundamental strategies. Market-cap indexes have a larger-cap and growth bias based on their construction methodology—"overweighting the overvalued stocks and underweighting the undervalued stocks." Fundamentally weighted indexes have more of a value tilt based on the screening and construction methodology. Market-cap indexes provide beta and are generally available in a low cost structure. Most fundamentally weighted indexes have historically delivered alpha (excess return) and often warrant a premium price relative to their market-cap equivalents.[1]

[1] Morningstar Direct, Russell Indexes, and Schwab Center for Financial Research, Exhibit 2, August 1996–December 2013.

Exhibit 2
(August 1996–December 2013)

	Rate of return	Standard deviation	Excess return	Beta	Sharpe ratio	Tracking error	Information ratio	Apple weight/ ranking
Russell Fundamental U.S. Large Company Index	11.37%	15.41%	2.84%	0.90	0.57	5.61%	0.51	0.70%/23
Russell 1000 Index	8.52%	16.12%	0.00%	1.00	0.36	0.00%	–	2.77%/1
Combined (60% FI/40% MC)	10.29%	15.45%	1.76%	0.94	0.49	3.38%	0.52	1.53%

Source: Morningstar Direct, Russell Indexes, and Schwab Center for Financial Research. The Russell Fundamental Index® Series was created on 2/24/11. Performance and statistical data on the Russell Fundamental Index Series for periods before each index's inception is back-tested but was calculated in the same manner as more recent, factual index data. The performance information presented represents back-tested performance based on combined simulated data and live data from 08/01/1996 to 12/31/2013. Back-tested performance is hypothetical, is done with the benefit of hindsight, and is provided for informational purposes only to indicate historical performance had the stocks actually been invested in over the relevant period. Commissions and other fees were not taken into consideration, and if they had been, performance would have been substantially lower.

The difference in construction methodology has led to different results over time. Market-cap indexes tend to do better in market environments that reward larger-cap stocks, while fundamentally weighted indexes tend to do better in environments in which fundamental factors are rewarded in the markets. Combining the two types of indexes may help reduce some of the peaks and valleys.

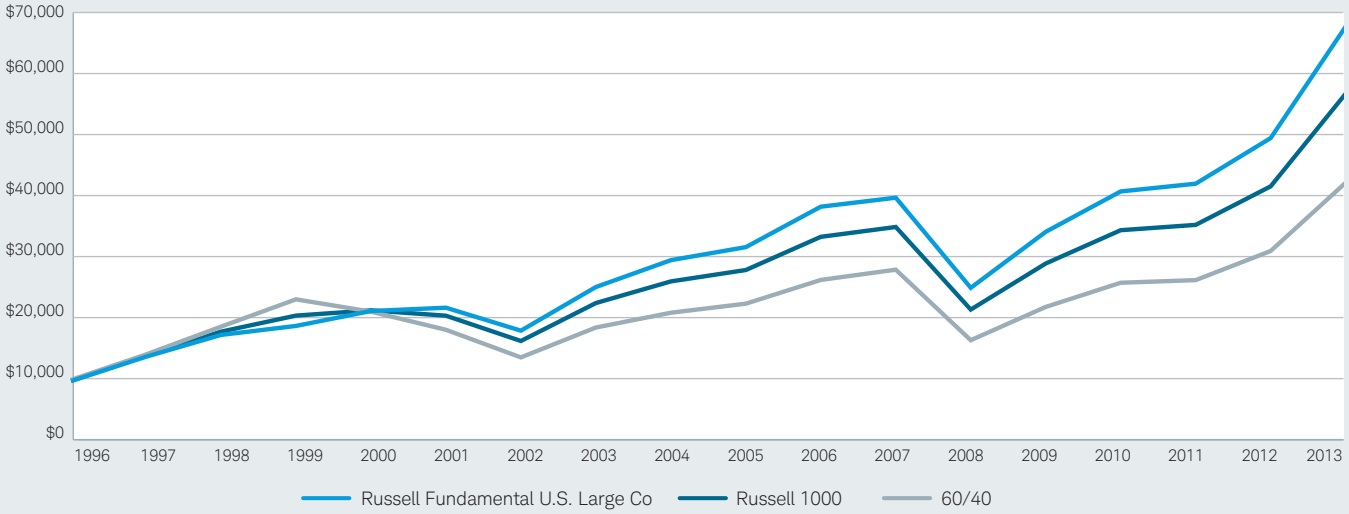
Exhibit 2 provides comparisons of a market-cap, a fundamental, and a combined allocation. Because of the favorable fundamental risk-return characteristics, we allocated 60% to the Russell Fundamental U.S. Large Company Index and 40% to the Russell 1000 market-cap index.

As noted above, the Russell Fundamental U.S. Large Company Index would have delivered favorable risk-adjusted results relative to the Russell 1000 Index. Over the period in question, the Russell Fundamental U.S. Large Company Index would have delivered excess return (2.84%) with less risk than the Russell 1000 Index (as measured by standard deviation). Note, however, that it would also have exhibited a higher tracking error (5.61%) than the Russell 1000 Index. Some investors are concerned about tracking error and would prefer to minimize the deviation from the benchmark.

Based on the data in Exhibit 2, advisors may choose to overweight fundamentally weighted index strategies if they are more focused on generating excess returns. If they are more focused on gaining market exposures and are concerned with tracking error, they may choose to overweight market-cap portfolios. We believe that market-cap and fundamental strategies complement one another and can be used together in building portfolios.

Another interesting comparison is the weighting of Apple in the two indexes. Throughout 2011 and much of 2012, the market-cap index benefited from a large allocation to Apple. As of December 31, 2013, Apple was the largest company by market capitalization, and therefore had the largest weighting in the Russell 1000 Index. Due to the weighting, Apple has a disproportionate impact on the market-cap indexes, exaggerating the rise and the fall. Some have referred to Apple's impact on the indexes as the Apple effect. As noted above, Apple is currently the 23rd-largest company in the Russell Fundamental U.S. Large Company Index.

Exhibit 3
Growth of $10K



Source: Schwab Center for Financial Research and Morningstar Direct. The Russell Fundamental Index® Series was created on 2/24/11. Performance and statistical data on the Russell Fundamental Index Series for periods before each index's inception is back-tested but was calculated in the same manner as more recent, factual index data. The performance information presented represents back-tested performance based on combined simulated data and live from 08/01/1996 to 12/31/2013. Back-tested performance is hypothetical, is done with the benefit of hindsight, and is provided for informational purposes only to indicate historical performance had the stocks actually been invested in over the relevant period. Commissions and other fees were not taken into consideration, and if they had been, performance would have been substantially lower.

Fundamentally weighted index strategies break the link with price. The Apple effect occurs because market-cap indexes are directly tied to price movements. Ignoring price, fundamentally weighted index strategies weight securities based on economic factors, leading to a different index construction.

Due to the difference in index construction methodologies, the Russell Fundamental U.S. Large Company and Russell 1000 indexes would have generated different results over time. There were periods when each index outperformed and underperformed. By combining the indexes, using both live and back-tested data, we were able to capture attractive risk-return characteristics while dramatically reducing tracking error. The combined portfolio exhibited a slightly higher *information ratio* than the fundamentally weighted index (0.52 versus 0.51).

Exhibit 3 shows historical performance of the Russell Fundamental U.S. Large Company Index, the Russell 1000 Index, and our Combined Portfolio. As the data shows, the Russell Fundamental U.S. Large Company Index would have outperformed both the Russell 1000 Index and the Combined Portfolio. As previously noted, we understand that the Russell Fundamental U.S. Large Company Index won't always outperform, and we also recognize that the index exhibits a relatively high tracking error. Therefore, we believe that the Combined Portfolio captures the benefits of both market cap and fundamental, and would have delivered attractive risk-adjusted results.

Conclusion

The Schwab Center for Financial Research believes that fundamental strategies represent an evolutionary step forward. Investors can now select plain vanilla index strategies or new flavors of alternatively weighted strategies. While both may begin with the same basket of eligible securities, the differences in weighting methodologies can lead to dramatically different results over time.

Fundamentally weighted indexes provide smart beta exposure and would have historically delivered excess returns relative to their market-cap equivalents.

There are market environments that favor market-cap strategies, and environments that reward fundamentally weighted strategies. Market-cap and fundamentally weighted indexes are both appealing in their own right. Market-cap indexes provide cheap beta exposure with little or no tracking error. Fundamentally weighted indexes provide smart beta exposure and would have historically delivered excess returns relative to their market-cap equivalents. We believe that combining the strategies gives investors the potential to capture the favorable aspects of each.

Today, investors can choose vanilla, strawberry, or chocolate. Or they can choose to combine them for the desired experience. Choices and options are good—if the investor can make informed decisions.

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 with a benchmark index. The excess return of the fund relative to the return of the benchmark index is a 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), a model that calculates the expected return of an asset based on its beta and expected market returns.

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 fundamental metrics such as revenue, sales, dividends, earnings, or book value. 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*.

Information ratio. A ratio of portfolio returns above the returns of a benchmark (usually an index) to the volatility of those returns. The information ratio (IR) measures a portfolio manager's ability to generate excess returns relative to a benchmark, but also attempts to identify the consistency of the investor. This ratio will identify whether a manager has beaten the benchmark by a lot in a few months or a little every month.

Market-cap weighting. Most of the broadly used market indexes today are "cap-weighted" indexes, such as the S&P 500, the MSCI indexes, and many of the Russell 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 feel that this overweighting toward the larger companies gives a distorted view of the market.

Russell 1000 Index. 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.

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

S&P 500 Index. The S&P 500® 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.

Sharpe ratio. 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 versus 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. 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.

Tracking error. Tracking error measures the annualized standard deviation of return of an investment compared with that of a given benchmark. Tracking error indicates how much variability there is in the difference of returns. The higher the tracking error, the larger the deviation in return from the benchmark.

FOR MORE INFORMATION

Contact Schwab Investment Solutions to learn more

(877) 824-5615
InvestmentSolutions@schwab.com

Anthony B. Davidow, CIMA®
Vice President, Alternative Beta and Asset Allocation Strategist
Schwab Center for Financial Research

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.

Important disclosures

The information provided here is for general informational purposes only and should not be considered an individualized recommendation or personalized investment advice. The investment strategies mentioned here may not be suitable for everyone. Each investor needs to review an investment strategy for his or her own particular situation before making any investment decision.

This information is not intended to be a substitute for specific individualized tax, legal, or investment planning advice. Where specific advice is necessary or appropriate, Schwab recommends consultation with a qualified tax advisor, CPA, Financial Planner, or Investment Manager.

Past performance is no guarantee of future results. Indexes are unmanaged, do not incur management fees, costs, and expenses, and cannot be invested in directly.

"Fundamental Index" is a registered trademark of Research Affiliates LLC.

Russell Investments and Research Affiliates, LLC have entered into a strategic alliance with respect to the Russell Fundamental Index Series. Subject to Research Affiliates' intellectual property rights in certain content, Russell Investments is the owner of all copyrights related to the Russell Fundamental Index Series. Russell Investments and Research Affiliates jointly own all trademark and service mark rights in and to the Russell Fundamental Index Series. Charles Schwab & Co., Inc. is not affiliated with Russell Investments or Research Affiliates. The Schwab Fundamental Index Funds are not sponsored, endorsed, sold, or promoted by Russell Investments or Research Affiliates, and Russell Investments and Research Affiliates do not make any representation regarding the advisability of investing in shares of the funds.

The Schwab Center for Financial Research is a division of Charles Schwab & Co., Inc.

HNW (0314-1687) MKT73814BPV-01 (06/13)

charles SCHWAB

Own your tomorrow™