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FINANCIAL RESEARCH

Journal of
Investment
Research

10 things everyone should know about smart beta strategies

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Investors have many questions about the proliferation of smart beta strategies. This paper answers some of the most common questions and offers Schwab's unique point of view regarding how to incorporate these strategies into a portfolio. The paper also discusses some of the common misconceptions about these increasingly popular strategies.

While the term "smart beta" sounds like a clever marketing hook, many of these strategies rely on a lot of academic rigor. Some of the research goes back decades, and now there is "live" data supporting the research. We prefer the term "strategic beta"—but understand that the market has embraced smart beta as a broad descriptor.

1. What are smart beta strategies? Smart beta is a term the industry has broadly used to define non-market-cap-weighted strategies, also sometimes referred to as strategic beta, alternative beta, or advanced beta. Morningstar now estimates that there is more than \$500 billion in strategic beta assets under management and nearly 900 different exchange-traded funds (ETFs) globally based on smart beta strategies, which include such strategies as:

- Equal weight
- Low volatility
- Dividend-oriented
- Momentum
- Fundamentally weighted strategies

The first generations of index-based strategies were designed to replicate a particular index (S&P 500®, Russell 1000®, Russell 2000®, MSCI EAFE, etc.). They provided cost-effective exposure to virtually every segment of the market, and they helped investors access many markets to which it had been difficult to efficiently gain exposure in the past. These strategies were readily available in mutual funds or ETFs.

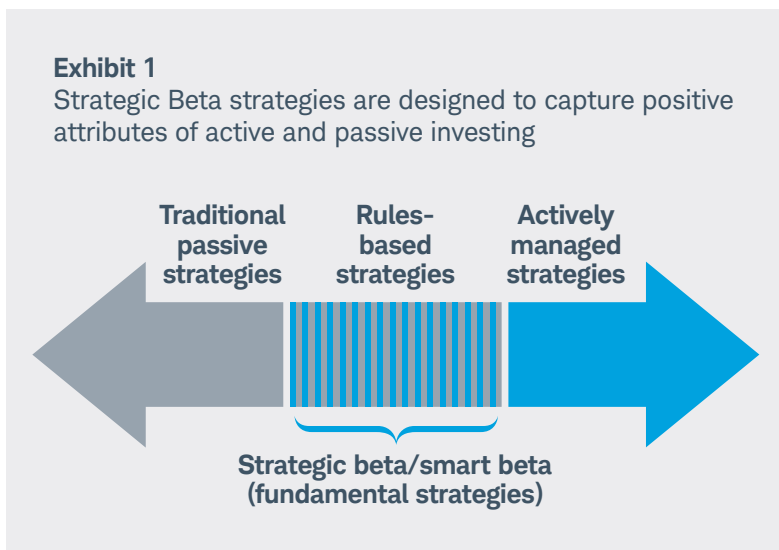
We believe smart beta strategies represent an evolutionary step forward in indexing, leveraging academic research to help provide enhanced index results. Over the years, there has been a

lot of academic research suggesting that there are certain factors that lead to outperformance over time, including such things as size, value, quality, and momentum, among others. Two of the most common factors are size and value. Research has shown that small-cap stocks outperform large-cap stocks over time and that value outperforms growth over time—not in every market environment, but over longer intervals.¹

In 2005, the first ETF tracking Research Associates' RAFI (Research Associates Fundamental Index™) methodology was launched. Research Associates conducted research showing that you could achieve better results by screening and weighting securities based on economic factors such as sales, cash flows, and dividends + buybacks rather than market capitalization (number of outstanding shares multiplied by share price). Some initially questioned the merits of this research, but 11 years later these strategies have proved to be viable alternatives to market-cap strategies.

Investors have been introduced to many more strategies since the introduction of Fundamental Index strategies. Morningstar broadly divides the strategic beta universe into three categories—**Return-oriented**, **Risk-oriented**, and **Other**. “Return-oriented” includes such strategies as quality, momentum, and fundamental, among others. These strategies are designed to improve returns relative to their market-cap equivalents. “Risk-oriented” include such strategies as low volatility, high beta, and minimum variance, among others. These strategies are designed to offer different risk levels relative to the market (increasing or decreasing). “Other” includes equal-weight, multi-asset and nontraditional fixed income, which don't necessarily fit within the first two categories.

2. Are they active or passive? Smart beta strategies capture many of the positive attributes of traditional passive strategies and active management. Like traditional passive strategies, they tend to be cost-effective ways of owning segments of the market. Like active management, they employ a disciplined investment process designed to improve upon the market experience



¹ Eugene Fama and Kenneth French, “The Cross-Section of Expected Stock Returns,” *The Journal of Finance*, Vol. 47, No 2, June 1992, 427–65.

Exhibit 2

Portfolio comparisons

| | Market cap | Fundamental | Active |
|------------------------|-----------------|--------------------------------|---------------------------------|
| Portfolio weighting | Cap weighting | Economic factors | Varies by manager |
| Portfolio construction | Larger-cap bias | Value tilt | Varies by manager |
| Portfolio turnover | Reconstitution | Reconstitution and rebalancing | Buy and sell discipline |
| Tax efficiency | Typically | Typically | Not typically |
| Cost structure | Lowest cost | Low cost | Varies by manager and structure |
| Alpha/beta | Beta | Potential alpha | Varies by manager |
| Investment process | Passive | Rules-based | Active |

(enhanced returns or reduced risk compared with a benchmark). We view them as being on a continuum (see Exhibit 1).

3. How are smart beta strategies different from market-cap strategies? Market-cap strategies provide the largest weighting to the largest companies based on market capitalization. Smart beta strategies “break the link with price” and weight securities based on other metrics. The difference in weighting methodologies can lead to dramatically different results. The table above compares market-cap and Fundamental Index strategies. Much of our research has focused on Fundamental Index strategies because of the academic rigor and availability of data.

Market-cap strategies generally do well when the biggest companies perform best. The underlying index changes only when companies are added or deleted from the index (known as “reconstitution”). Because the index isn’t rebalanced, large companies can increase their weights over time based on market appreciation. Market-cap ETFs are generally the lowest cost and tend to be relatively tax efficient. Because they are deemed to be the market proxy, they deliver market beta.

Fundamental Index strategies employ a disciplined, rules-based approach that selects and weights securities based on economic factors such as sales, cash flow, and dividends + buybacks. They tend to exhibit a *value tilt* and rebalance at regularly scheduled intervals

(generally quarterly). Importantly, the magnitude of this value tilt varies over time. Rebalancing to non-price measures results in Fundamental Index strategies having a value tilt that tends to be reflective of the market’s willingness to pay for growth. When the valuation dispersion between growth and value companies is narrow, Fundamental Index strategies will have a modest value tilt. When the valuation dispersion between growth and value companies is large, Fundamental Index strategies will have a large value tilt.

Fundamental Index strategies are typically more expensive than market-cap strategies—but more cost-effective than actively managed strategies. Based on research conducted by Schwab Center for Financial Research (SCFR), and other independent research, Fundamental Index strategies have historically delivered alpha (excess returns) over the long run.

4. How should investors incorporate Fundamental Index strategies in their portfolios? We view Fundamental Index strategies as a complement to market-cap strategies and active management. We believe that each of these types of strategies has a specific role, and combining them provides a better diversified portfolio. We have developed four “key levers” to guide us in the portfolio construction process—**tracking error, loss aversion, alpha, and cost**. We evaluate each strategy relative to these levers.

Exhibit 3

Portfolio construction levers

| Key lever | Market cap | Fundamental | Active |
|----------------|-----------------------------|------------------------|--|
| Tracking error | Little or no tracking error | Higher tracking error | Varies by manager |
| Loss aversion | No downside protection | No downside protection | May provide a level of downside protection |
| Alpha | No | Potential alpha | Varies |
| Cost | Lowest cost | Low cost | Varies by manager and vehicle |

Market-cap strategies exhibit little or no tracking error and are generally the lowest-cost solution—but they offer no downside protection or alpha potential because they are essentially the market benchmark.

Fundamental Index strategies offer the potential for alpha, but they will likely exhibit large tracking error relative to a comparable market-cap-weighted index. They are typically more expensive than market-cap strategies but more cost-effective than actively managed strategies. Fundamental Index strategies provide no downside protection because they are unable to alter their strategy.

Active managers vary a great deal from one to another. They are, however, best equipped to respond to changing market conditions, and some are effective in providing downside protection. We believe that some active managers can deal with clients' concerns regarding *loss aversion*. Daniel Kahneman's research showed that investors will go to great lengths to avoid losses.²

5. How can investors distinguish among the myriad of strategic beta strategies? With the proliferation of smart beta strategies, investors have had a challenging time distinguishing among the options. Although these strategies are often grouped together, they can differ significantly depending on index construction methodology.

In our paper *Strategic beta strategies: An evaluation of different approaches*, we dissect a few of the most common strategic beta strategies. The purpose is not to suggest that one strategy is better than the other but rather to illustrate the vast differences within the universe. We suggest that investors follow the steps listed below in analyzing the strategies:

- What is the methodology for screening and weighting securities?
- What is the underlying index?
- What are the sector allocations, and does this introduce some unintended bets?
- What is the capitalization breakdown of the strategy?
- What is the allocation across value, growth, and core stocks?

The methodology is constructive in understanding what the strategy is attempting to do. The underlying index methodology identifies the eligible securities in an index. The methodology used in constructing a Fundamental Index portfolio is vastly different from the one used for equal-weight, low volatility or momentum. The methodology used may also lead to large sector bets or market capitalization that differs from that of the benchmarks. Some of these strategies may have a smaller-cap bias in their portfolios.

²Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica*, Vol. 47, No 2, March 1979, 263–92.

Some critics will point to these strategies as exploiting factors identified by the academic community—value, size, momentum, and quality, among others. Many smart beta strategies have a *value tilt* based on their weighting methodology, but the degree of the value-versus-growth allocation may vary over time. Momentum strategies tend to have a *growth tilt*.

6. Why have these strategies become so popular? These strategies originally became popular with institutional investors, but in recent years advisors and individual investors have also embraced them. A few factors have contributed to the increased popularity of smart beta strategies. Most importantly, they are now easily accessible through mutual funds and ETFs, with ETFs receiving significant interest and asset growth. The track records of many of these strategies now support the historical research. In addition, many of these strategies have become popular based on perceived outperformance relative to their market-cap cousins.

With the growth of smart beta strategies, there is an ever-increasing demand for better education regarding the role and use of these strategies in client portfolios. The questions have evolved from “Do the strategies work?” to “How can I incorporate them?” and “How can I distinguish among the options?”

We think it’s important for investors to dig a little deeper to understand the differences among strategies. What is the underlying strategy (fundamental, low volatility, momentum, etc.)? What sorts of bets and biases are being introduced? What sort of rigor and research went into the development of the strategy, and what is the underlying track record?

7. Are all strategies really smart? Smart beta strategies are often grouped together, but as previously discussed, not all strategies are created equal. Some of these strategies are based on a lot of academic rigor and sound research analysis. Others are merely trying to exploit the large growth potential that may result from significant interest in these types of strategies.

Our research has shown that there is a great deal of variability within the strategic beta universe. Equal-weight is very different from low volatility, which in turn is very different from Fundamental Index strategies. Because there are significant differences in the weighting and construction methodologies, investors shouldn’t assume the same outcomes for all these strategies. Certain market environments will reward one type of strategy over another.

We encourage investors to spend the time to understand the strategies they are investing in—not just smart beta, but any investments they make. Some will do well in certain market conditions, and others will thrive in different environments. It’s important to **know what you own—and know how you own it.**

8. Why does the Schwab Center for Financial Research favor Fundamental Index strategies?

The Schwab Center for Financial Research has done a lot of research on smart beta broadly and Fundamental Index strategies specifically. We tend to prefer strategies with strong fundamental underpinnings and available data to analyze. We like the fact that Fundamental Index strategies have been battle tested over the last decade and that a lot of rigor went into the development of these strategies.

Our research has shown that these strategies have delivered attractive risk-adjusted returns over time. In fact, the “live” results support the back-tested results. Fundamental Index strategies are intuitive and easy to understand. Research Affiliates focused a lot of attention on implementation before introducing this methodology. They wanted to make sure that Fundamental Index strategies could support significant growth without deviating from the underlying index.

We can’t draw the same conclusion about all smart beta strategies. Some have more rigor than others—and some may not meet clients expectations over time. Based on our research, however, we don’t believe that it is prudent to group all these strategies together and expect the same outcomes. There may be large differences from one strategy to the next, and some may ultimately not deliver the desired results.

Exhibit 4

Recommended portfolio allocations

| | Domestic large | Domestic small | International large | International small | Emerging markets |
|-------------------|----------------|----------------|---------------------|---------------------|------------------|
| Market cap | 30% | 25% | 20% | 20% | 20% |
| Fundamental | 50% | 50% | 30% | 30% | 30% |
| Active management | 20% | 25% | 50% | 50% | 50% |
| Index (MC + FI) | 80% | 75% | 50% | 50% | 50% |

For illustrative purposes only. Charles Schwab Investment Advisory, Inc. CSIA used the international large company allocations for all international categories, given that international small company and emerging markets have a much shorter data history.

9. How should investors allocate among active, market-cap, and Fundamental Index strategies?

We believe that Fundamental Index strategies can serve as a valuable complement to market-cap and actively managed strategies. Investors should begin by understanding the role each strategy plays in building a portfolio (see “key levers”). In developing our recommended allocation, we utilized the key portfolio levers referenced above and optimized the allocation across asset classes.

In the most efficient markets (domestic large cap), there is generally very little persistent skill in beating the market; therefore, we would allocate 50% of the portfolio to Fundamental Index strategies, 30% to market-cap, and 20% to active management. In the least efficient markets (international small cap and emerging markets), we believe that investing in the “right” companies and avoiding the “wrong” companies should be at a premium. Therefore, we would allocate 50% to active management, 30% to Fundamental Index, and 20% to market-cap. For the active management allocation, we would favor good managers who have historically protected portfolios on the downside (i.e., high downside capture ratios).

10. Is now the right time for Fundamental Index strategies?

We believe that market-cap and Fundamental Index strategies can complement one another. Over the long run, Fundamental Index portfolios have historically delivered alpha (excess returns). For much of 2015, however, Fundamental Index lagged market-cap by a fairly

wide margin. We believe that the tide has turned, and Fundamental Index strategies will likely outperform their market-cap equivalent in the coming year.

In 2015, the domestic equity markets were dominated by the **FANG** stocks—**F**acebook, **A**mazn, **N**etflix, and **G**oogle (which changed its name to Alphabet). These companies dominated the returns and the headlines. In fact, these four stocks became the darlings of Wall Street, rising in price without any apparent regard for valuation. Netflix and Amazon were the top two performing stocks in 2015. The chart below helps illustrate the weighting differences between a market-cap index and a Russell Fundamental Index.

As the data shows, these four “momentum” stocks were some of the largest names in the Russell 1000 Index (the 10th-, 6th-, 88th- and 11th-largest holdings), but had much smaller representation in the Russell Fundamental U.S. Large Company Index (332nd-, 116th-, and 70th-largest holdings). Netflix was not a holding in the Russell Fundamental Large Company Index. The differences are due to their weighting methodologies. Because all four companies have large market capitalization, they have significant weighting in the Russell 1000 Index where market capitalization is the only metric that matters. But because the Russell Fundamental Index methodology weights securities based on sales, cash flow, and dividends + buybacks, these companies represent a much smaller weight in the Russell Fundamental Index.

The price/earnings ratio (P/E) is one of the most common measures of valuation. The FANG stocks traded at inflated P/E's at year end (106, 975, 306, and 36 respectively). The overall market had a roughly 19 P/E, which was at the higher end of the normal range. The P/E's of these four stocks were extraordinarily high, and they generally pay no dividends. This harkens back to the "dot.com" bubble when companies traded at unrealistic P/E's—and valuations didn't seem to matter.

In today's volatile market environment, do you want to overweight a high P/E stock that has already experienced a significant run-up, or would you rather overweight a stock with attractive fundamental characteristics? Fundamental Index strategies systematically identify and weight securities based on **fundamentals—not their popularity**.

Conclusion

We believe smart beta strategies represent an evolutionary step forward in indexing. As we've pointed out, however, not all strategies are created equal. We encourage investors to take the time to understand the type of strategy they are considering for an investment. Spend the time in advance to avoid surprises in the future.

We believe that Fundamental Index strategies serve as a complement to active management and market-cap strategies. We have developed a framework for allocating among these strategies based on the role they play in building portfolios and historical analysis of the underlying data. We believe that the current market environment will likely reward Fundamental Index strategies because of their screening and weighting methodology.

Exhibit 5 "FANG" stocks

| | Rank in Russell 1000 | Rank in Russell Fundamental | 2015 total return | Forward P/E/ ratio | P/B ratio | P/S ratio |
|----------|----------------------|-----------------------------|-------------------|--------------------|-----------|-----------|
| Facebook | 10 | 332 | 34.15% | 105.67 | 7.16 | 18.64 |
| Amazon | 6 | 116 | 117.75% | 975.20 | 25.61 | 3.18 |
| Netflix | 88 | — | 134.38% | 305.57 | 22.58 | 7.73 |
| Google | 11 | 70 | 46.60% | 35.90 | 4.60 | 7.85 |


Source: Morningstar Direct. Data as of 12/31/15.

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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. Davidow is also a member of the firm's Asset Allocation Council.

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," "Democratizing Alternative Investments," "The Role and Use of Alternative Investments," "Currency as an Asset Class," "An Evolutionary Approach to Portfolio Construction," and "Strategic 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 served on the board of directors for IMCA from 2009 to 2014. He holds FINRA Series 7, 24, and 63 registrations.

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HNW (0416-1395) MKT73814SBS-00 (04/16)

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