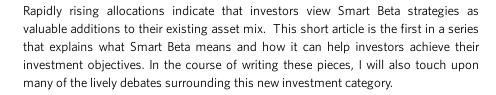


ARTICLE

Part 1 - The Genesis of Smart Beta Investing

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It is important to acknowledge at the outset that I am an "interested party" as an officer of Research Affiliates, which provides the RAFI™ suite of equity, low volatility, and bond indices. It would be unwise not to bear my affiliation in mind when reading what I have to say about Smart Beta.

For what it is worth, I see myself as a researcher providing a conceptual framework for understanding the financial theory and empirical evidence related to Smart Beta investing. In addition, my daily interaction with institutional clients and consultants as the Chief Investment Officer of an asset manager positions me to offer a useful perspective on the role of Smart Beta in the investment management ecosystem.

For context, there is now an estimated \$140 to \$160 billion of assets invested in Smart Beta strategies. Major index providers offer a variety of Smart Beta indices, and prominent fund providers have created products based on them. Leading investment consultants have endorsed Smart Beta investing, and some large, influential institutions have committed funds to Smart Beta strategies. (A quick Google search will turn up the names of these organizations.) The wide availability of investment vehicles indicates that the industry views Smart Beta not as a fad but rather as a core component of an investment program.

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The Smart Beta approach to passive investing may be most readily understood as an evolutionary development in index design. Traditional indices characterized by capitalization weighting are based upon the Capital Asset Pricing Model (CAPM). This model recognizes that all investors in a given market are exposed to systematic risk. (Beta is an estimate of the extent to which a portfolio will participate in broad



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market movements.) For investors who disbelieve that active managers can persistently capture "free lunch" returns (alpha), the capweighted market portfolio is the only sensible passive portfolio.

The last 40 years have seen the CAPM rejected on both theoretical and empirical grounds. While CAPM is still taught in business schools as a valuable conceptual tool, the state of the art in return modeling is the multi-factor framework based on the Arbitrage Pricing Model (APT). Financial economists now believe that there are multiple sources of equity premia, some risk-based and some behavior-based. Empirically, the premiums, which appear to be robust over time and across countries and economically significant, are associated with the market, value, small cap, momentum and low volatility factors.

In the multi-factor APT world, investors can earn the equity premium by loading on risk exposures and by exploiting persistent behavioral anomalies. Operationally, this often means starting with the cap-weighted market portfolio and then tilting toward cheaper stocks, smaller cap stocks, stocks with strong recent 12-month price performance, and low volatility stocks. These are strategies employed by most quantitative asset managers.

The development of fundamentals-weighted indices represented a milestone in index-based investing. This departure from capweighted indexing broke the connection between price and index portfolio weights in an intuitive way that results naturally in a dynamic value tilt.

Smart Beta represents a further evolutionary step in index-based investing. Today, Smart Beta indices support investing in transparent, cost-efficient, easy-to-implement portfolios which encapsulate exposures across the full set of standard equity premia. Whereas cap-weighted investing relied upon a single premium source, Smart Beta indices incorporate diversified exposures to various sources of equity returns. Smart Beta is an evolutionary advance in beta investment strategy just as multi-factor APT is an improvement in financial theory.

Since Smart Betas belong to the evolutionary lineage of index-based investing, they share many common characteristics with traditional indexing. Large institutional investors have used Smart Beta strategies to complement and even replace cap-weighting in their passive core. As part of their passive investment program, they expect Smart Beta portfolios to be transparent; based upon simple mechanical rules; have low turnover, high investment capacity and low implementation costs; and be broadly representative of the underlying economy. With regard to that last requirement, we observe that, depending upon the portfolio construction methodology employed, the same factor exposure can result in a thoroughly different economic exposure.

The requirements for low turnover, high capacity, and cut-rate implementation cost do not constitute a low hurdle. While there is a general consensus on the standard sources of equity premia, there is sharp disagreement on approaches to constructing Smart Beta indices that capture these sources of excess return while preserving the desirable characteristics of traditional indexing.

Investors thinking about incorporating Smart Beta strategies into their passive core (or, for that matter, into their traditional active mix) should focus on how to combine cap-weighted indices with Smart Betas to create the desired mixture of equity premium exposures. Some of the equity premium sources, such as low volatility and value, are more negatively correlated with the business cycle, while others, such as market, are highly positively correlated. Portfolios that target some of the equity premium sources, such as low volatility, value, and momentum, typically have very attractive Sharpe ratios. Similarly, strategies that favor exposure to the market factor will tend to have lower tracking error relative to traditional cap-weighted benchmarks. We will return to implementation issues and introduce many other concepts in future articles in this series.



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