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# Smart beta: too good to be true?

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# Smart beta: too good to be true?

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## **Abstract**

Smart beta strategies promise to deliver market-beating returns with simplicity and low cost, but the reality is more complicated. Contrary to popular perception, smart beta strategies are neither passive nor well diversified. Nor can they be expected to perform consistently in all market environments. Perhaps most importantly, because of their focus on only a limited number of factors, smart beta strategies fail to exploit numerous potential profit opportunities.

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## Smart beta: too good to be true?

Smart beta or alternative indexing – whatever its label (we will stick with smart beta) – is a relatively new investment approach that has attracted considerable attention and investment from pension funds and individuals.<sup>1</sup> Its popularity is hardly surprising, as smart beta promises to deliver market-beating returns in a convenient, low-cost, easy-to-understand manner.

Smart beta promoters emphasize the simplicity of the strategy's portfolio construction and trading rules. They often compare it with passive index investing, which delivers market returns at low cost and with high transparency. Yet the goal of smart beta is the same as that of active investing – to outperform the market.

Unlike active strategies, however, smart beta eschews security research. Instead, it seeks to beat the market by replacing the security weighting scheme used by passive management (capitalization weighting) with a weighting scheme that emphasizes certain security characteristics, or factors – value, size and momentum, among them – that have performed well historically.

It sounds simple enough. However, the reality of smart beta is more complicated, and its promise of higher return with lower risk is less certain. Below, we debunk some common misconceptions associated with smart beta strategies.

### **Smart beta portfolios are passive**

Smart beta is often compared with passive investing because, like index funds, it does not require the portfolio manager to forecast security returns and risks. It is essentially a rules-based approach, with preset criteria dictating the weighting of securities in the portfolio.

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<sup>1</sup> Assets under management globally total U.S.\$544 billion [see Evans (2015)].

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## Smart beta: too good to be true?

But a truly passive portfolio buys and holds the capitalization-weighted market; that is, the stocks are weighted according to the ratios of their market values (or capitalizations) to the total market value of all stocks in the index. It requires little trading because the portfolio and the benchmark index adjust simultaneously as security prices change.<sup>2</sup> The result is a portfolio that delivers the underlying market's return, along with the underlying market's risk.

Smart beta portfolios, by contrast, weight security holdings to increase exposures to certain preselected factors. This process requires a number of decisions. Which factor should be targeted? How might the factor be defined? Should value, for example, be based on book-to-price ratio, earnings-to-price ratio or some other criterion? How should portfolio weights be determined – by weighting stocks according to their factor exposures or by holding just those stocks with the higher factor exposures?

And unlike passive portfolios, smart beta requires periodic trading in order to rebalance the portfolio to its targeted weights as securities' factor exposures change. How frequently should this rebalancing occur? These are all active decisions akin to the ones made by active managers every day. And like other active strategies, smart beta strategies will deliver returns that differ from those of a passive, cap-weighted index, for better or for worse [Jacobs and Levy (2014a)].

### **Smart beta targets the most significant return-generating factors**

Smart beta equity portfolios in general target only one or a limited number of factors – value, small size, price momentum and/or low volatility. Smart beta providers would have you believe that these factors have the greatest impact on security returns. Some factors that have performed as well as, or better than, the chosen few are left off the smart beta menu.

In our own research, first published in 1988, we looked at 25 security characteristics, including most of the factors currently used in smart beta strategies [Jacobs and Levy (1988)].

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<sup>2</sup> Trading may be required to reinvest dividends and to adjust for corporate actions (such as mergers, acquisitions and spin-offs) and changes in index membership.

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## Smart beta: too good to be true?

We identified as statistically significant many more than the few factors pursued today by smart beta strategies. More recently, researchers have found dozens of factors to be significantly related to stock returns [Green et al. (2014)]. Interestingly, some popular smart beta factors, such as book-to-price, small size and price momentum, were not among the most significant. Portfolios restricted to the handful of factors targeted by smart beta are overlooking many potential opportunities.

### **Smart beta portfolios are well diversified**

Most smart beta portfolios hold a large number of stocks, but numbers may not translate into diversification. Smart beta's focus on a particular factor can lead to incidental bets and sector biases, which may introduce unintended risks.<sup>3</sup> A focus on value, for example, can result in exposure to distressed firms. A focus on price momentum would have loaded up on the technology sector in 1999, prior to the tech wreck. More recently, low-volatility portfolios had a large bet against the financial sector at the market bottom in 2009, which contributed to their subsequent underperformance.

### **Smart beta factors perform consistently**

Smart beta factors are selected and security weights determined based on historical data rather than on forecasts. These choices represent an expectation that targeted factors will continue to perform as they have in the past.

As economic or market conditions change, however, factor returns can vary significantly. It is well established that small stocks have periods of outperformance followed by periods of underperformance; the same holds true for value stocks. Price momentum, which performed well prior to the financial crisis, suffered in 2009, as the market reversed direction. A constant exposure to a factor regardless of underlying conditions leaves a portfolio vulnerable when that factor underperforms, as it inevitably will.

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<sup>3</sup> A recent analysis of the performance of numerous smart beta ETFs indicates that the negative effects of unintended exposures offset in part or in full any return advantages provided by desired factor exposures [Glushkov (2015)].

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## Smart beta: too good to be true?

### **Smart beta portfolios benefit from mean-reversion in prices**

One argument in favor of some smart beta strategies is that the systematic portfolio rebalancing required is a significant contributor to excess returns [see, e.g., Arnott et al. (2013) and Steward (2014)]. It has the effect of forcing sales of appreciated securities and purchases of securities that have declined in price. In theory, the portfolio will benefit as the prices of both types of securities revert to “normal” levels. However, empirical tests of smart beta exchange-traded funds (ETFs) find no consistent evidence of a mean-reversion benefit [Glushkov (2015)]. Furthermore, any active portfolio can choose to implement a rebalancing scheme that takes advantage of mean-reversion and, what’s more, can do so using proprietary trading rules less susceptible to front running than those of smart beta, and more responsive to changing market conditions.

### **Smart beta portfolios can be efficiently combined**

Smart beta promoters often recommend investing in multiple factors to protect against the underperformance of any single factor. Value and momentum is one recommended combination. Returns to the momentum factor have a negative relationship (or correlation) with returns to value factors. Momentum strategies buy past winners and sell losers, whereas value strategies typically buy past losers and sell winners. When the momentum factor produced large losses in 2009, value factors such as book-to-price performed well.

Combining two separate smart beta portfolios can be problematic, however. There is no unambiguously correct method to determine the relative weightings of the two portfolios. Some of the holdings of the two portfolios may overlap, increasing security risk. Or the focus on different factors may lead to one portfolio buying a security even as the other is selling the same security, increasing transaction costs.

Some smart beta providers target multiple factors in a single portfolio. But this may complicate factor selection. For example, are value and momentum enough? What about small size? After the market trough in 2009, the small-size factor would have boosted the performance of a value-plus-momentum strategy.

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## Smart beta: too good to be true?

And this solution still fails to take advantage of the full range of return-generating factors, including those overlooked by smart beta strategies.<sup>4</sup>

### **Smart beta benefits from transparency**

Smart beta is typically more transparent than other active strategies. Investors know up front the factor(s) to be targeted, the frequency of rebalancing and the weighting scheme. Transparency can be beneficial for investors, enhancing their understanding of the strategy and allowing them to better gauge investment performance. However, transparency also has inherent disadvantages that can prove costly. In particular, the generic nature of smart beta factors, combined with preset rebalancing rules, can render such strategies vulnerable to both front running and factor crowding.

Front running occurs when others can anticipate the rebalancing needs of smart beta portfolios and buy stocks before they are added to those portfolios or sell stocks before they are dropped.<sup>5</sup> This type of anticipatory trading can run up the prices of securities before they are purchased by smart beta portfolios and push down the prices of securities before they are sold, eroding portfolio performance.<sup>6</sup>

Factor crowding occurs when large numbers of investors buy or sell the same securities on the basis of similar factors. This can lead to factor overvaluation and factor crashes, just as too many investors chasing any asset can lead to overvaluation followed by abrupt reversals.

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<sup>4</sup> For a discussion of using the full range of return-generating factors, see Jacobs and Levy (2014b).

<sup>5</sup> It is well known that the annual rebalancing of the most prominent small-capitalization stock index is affected by front running [see Madhavan (2003)].

<sup>6</sup> As assets in smart beta strategies increase, adverse price pressure can be expected to increase accordingly, leading to even larger profit opportunities for front-runners and more erosion of factor returns. Recent evidence has documented adverse price pressure on smart beta strategies that rebalance on the basis of the book-to-price and size factors [see Yost-Bremm (2014)].

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## Smart beta: too good to be true?

In the market turmoil of August 2007, for example, some quantitative hedge funds were forced by margin calls to liquidate holdings; they sold off stocks associated with commonly used factors, causing losses for other managers holding the same stocks [Khandani and Lo (2007)].

### **Smart beta has nearly unlimited capacity**

Some smart beta promoters assert that, because smart beta represents a small portion of the equity market, there is more than enough capacity to handle growing assets in these strategies [Bell (2015, p.52)]. But this does not mean capacity is unlimited.

Everyone can hold the capitalization-weighted market index because it represents the entire stock market. This is not the case for smart beta strategies. For every smart beta investor who overweights a stock (relative to its market weight), there must be another investor who underweights it. As a factor outperforms over time, more investors will want to buy those securities associated with the factor and fewer will want to sell. That will drive up these securities' prices and lower their future returns.<sup>7</sup>

Many active managers try to protect the liquidity and profitability of their strategies by imposing limits on the amount of assets they manage.<sup>8</sup> But smart beta factors are publicly available and product offerings are similar; there is no way to control the volume of investment in a factor. Even if one manager closes its strategies to new investors, other managers can continue to invest in that factor.

### **Smart beta streamlines the investment decision process for investors**

One of the purported benefits of smart beta is that it streamlines the investment decision, not only for managers, but also for investors. Given its simplicity and transparency, it is said to be easier to implement and to require less due diligence than other active strategies [Hsu et al. (2012, p. 11)].

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<sup>7</sup> Smart beta performance in recent years has been disappointing [see Barlyn (2015), Evans (2015) and Malkiel (2015)].

<sup>8</sup> On the importance of setting capacity limits for a firm's assets under management, see Perold and Salomon (1991).



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## Smart beta: too good to be true?

With other active strategies, however, portfolio managers shoulder the responsibility for determining what investment criteria to emphasize, and for deciding whether and when to alter them as conditions change. Smart beta shifts those decisions from the portfolio manager to the investor. With smart beta, it is incumbent on the investor to select the right smart beta factor, or factors, and to decide if, and when, to get into or out of a particular factor. In doing so, investors are taking on substantial investment responsibility.

### **Smart beta costs less than active investing**

Smart beta is generally viewed as less costly than traditional active management, primarily because its management fees and portfolio turnover are usually lower. When evaluating smart beta, however, investors must consider the hidden costs.

Smart beta portfolios may incur substantial opportunity costs. By failing to take into account all the factors that research has shown to be significantly related to security return, smart beta portfolios miss out on potentially rewarding opportunities. Also, by ignoring the changing relationships between factor returns and underlying economic and market conditions, they may end up exposed to risks without rewards.

Furthermore, smart beta's use of preset rebalancing frequencies and generic factors opens the door to front running and factor crowding, which can increase transaction costs and reduce or even eliminate any value added from the factors targeted. Finally, smart beta imposes on the investor responsibilities for factor selection and timing that, if done properly, are likely to entail considerable research expenditure. These costs are not reflected in the fees of smart beta strategies.

### **Conclusion**

Smart beta strategies may be a useful addition to the range of investment approaches available to investors, but they are not a magic formula for increasing returns while reducing risks. Investors would be better served by a more realistic consideration of the pros and cons of smart beta investing.

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## Smart beta: too good to be true?

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